

ACC NR: AP6032477 SOURCE CODE: UR/0056/66/051/008/0819/0824

AUTHOR: Zvezdin, A. K.

ORG: none

TITLE: The theory of nuclear spin polarization induced by hot electrons

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 51, no. 3, 1966, 819-824

TOPIC TAGS: nuclear spin, electron polarization, electron distribution, hot electron

ABSTRACT: Nuclear spin polarization due to hot electrons (Feher effect) is studied theoretically for a case where the electron distribution function differs from the Boltzmann or Fermi distributions. The possible shape of the hot electron distribution with respect to spin sublevels is investigated. The dependence of the nuclear polarization on the distribution function parameters is elucidated. The author expresses his gratitude to V. M. Yeleonskiy, and K. K. Svidzinskiy for discussing the work. Orig. art. has: 17 formulas. [Author's abstract]

SUB CODE: 20/SUBM DATE: 31Jan66/ORIG REF: 004/OTH REF: 004/

Card 1/1

GUSEVA, G.I.; ZVEZDIN, A.K.

Transfer effects in  $n$ -InSb in inelastic polar scattering of  
electrons. Fiz. tver. tela 7 no.6:1879-1880 Ju '65.  
(MIRA 18:6)

1. Institut fiziki metallov AN SSSR, Sverdlovsk.

L 12789-66 ENT(1)/EWA(m)-2 IJP(c) AT

ACC NR: AP5026625

SOURCE CODE: UR/0056/65/049/004/1313/1325

AUTHOR: Zvezdin, A. K.

50  
45  
B

ORG: None

TITLE: Nuclear polarization in semiconductors and semimetals by a direct current

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 49, no. 4, 1965, 1313-1325

TOPIC TAGS: semiconductor theory, nuclear spin, electron spin, spin phonon interaction, nuclear magnetic moment, relaxation process

ABSTRACT: The effect of the difference between the spin and electron temperatures, brought about by an electric current in a semiconductor or semimetal, and its influence on the magnetization of the electron and nuclear spin subsystems are investigated. Two possible mechanisms for establishing a difference between the spin and electron temperatures, interaction with acoustic and optical phonons, are considered and an analysis is made of the resulting nuclear magnetization of the system in the presence of drift and heating of the electron gas. The spin relaxation time of the conduction electrons, associated with their interaction

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with optical phonons, is calculated for equilibrium and for hot electrons. It is shown that interaction with optical phonons may be the principal mechanism in the establishment of nuclear and electron polarization. Author thanks P. S. Zyl'yanov and V. P. Silin for discussions and valuable comments.

Orig. art. has: 2 figures and 61 formulas.

SUB CODE: 20/ SUBM DATE: 13May65/ NR REF SOV: 004/ OTM REF: 009

Card 2/2

hw

ALEKSEYEVA, G.Ye., kand. tekhn. nauk, dots.; MELESHKINA, L.P., dots., kand. tekhn. nauk; BALUYEV, V.K., inzh.; BAMDAS, A.M., prof., doktor tekhn. nauk; VENIKOV, V.A., prof., doktor tekhn. nauk; YEZHKOV, V.V., kand. tekhn. nauk; ANISIMOVA, N.D., dots., kand. tekhn. nauk; GANTMAN, S.A., kand. khim. nauk; GLAZUNOV, A.A., dots., kand. tekhn. nauk; GOGUA, L.K., inzh.; GREBENNICHENKO, V.T., inzh.; GRUDINSKIY, P.G., prof.; GORFINKEL', Ya.M., inzh.; ZVEZDIN, A.L., inzh.; KAZANOVICH, G.Ya., inzh.; KNYAZEVSKIY, B.A., dots., kand. tekhn. nauk; KOSAREV, G.V., dots., kand. tekhn. nauk; MESSERMAN, S.M., kand. tekhn. nauk, dots.; KOKHAN, N.D., inzh.; KUVAYEVA, A.P., dots., kand. tekhn. nauk; SOKOLOV, M.M., dots., kand. tekhn. nauk; LASHKOV, F.P., dots., kand. tekhn. nauk; LAZIN, A.I., inzh.; YUDIN, F.I., inzh.; LIVSHITS, A.L., kand. tekhn. nauk; METEL'TSIN, P.G., inzh.; NEKRASOVA, N.M., dots., kand. tekhn. nauk; OL'SHANSKIY, N.A., dots., kand. tekhn. nauk; POLEVAYA, I.V., dots., kand. tekhn. nauk; POLEVOY, V.A., dots., kand. tekhn. nauk [deceased]; RAZEVIK, D.V., prof., doktor tekhn. nauk; RAKOVICH, I.I., inzh.; SOLDATKINA, L.A., dots., kand. tekhn. nauk; TREMBACH, V.V., dots., kand. tekhn. nauk; FEDOROV, A.A., prof., kand. tekhn. nauk; FINGER, L.M., inzh.; CHILIKIN, M.G., prof., doktor tekhn. nauk, glav. red.; ANTIK, I.V., inzh., red. GOLOVAN, A.T., prof., red.; PETROV, G.N., prof., red.; FEDOSEYEV, A.M., prof., red.

(Continued on next card)

ALEKSEYEVA, G.Ye. (continued). Card 2.

[Electrical engineering manual] Elektrotekhnicheskii  
spravochnik. Pod obshchei red. A.T. Golovana i dr. Moskva,  
Energiia. Vol.2. 1964. 758 p. (MIRA 17:12)

1. Moscow. Energeticheskii institut. 2. Moskovskiy energe-  
ticheskii institut (for Golovan, Grudinskiy, Petrov,  
Fedoseyev, Chilikin, Venikov). 3. Chlen-korrespondent AN  
SSR (for Petrov).

ZVEZDIN, A. Ya., inzh.; PANOV, P.A., inzh.

Standardize movable repair equipment. Standartizatsiia 29  
no. 11:59-60 N '65 (MIRA 19:1)

ACC NR 6019755

SOURCE CODE: UR/0113/66/000/006/0007/0009

AUTHOR: Zvezdin, A. Ya. (Candidate of technical sciences)

ORG: none

TITLE: Determining the stationary power output and service life of truck engines

SOURCE: Avtomobil'naya promyshlennost', no. 6, 1966, 7-9

TOPIC TAGS: vehicle engine, internal combustion engine, power takeoff, stationary truck engine, vehicle engine cooling system, engine performance characteristic/  
ZIL-157 vehicle engine

ABSTRACT: To determine the advantage of using truck engines for stationary applications, a preliminary study of the efficiency of the standard cooling system for the ZIL-157 truck engine was carried out. A complex experimental and theoretical study showed that the stationary power of the ZIL-157 engine does not exceed 50% of its rated power, being only 52 hp at 2200 crankshaft rpm at an ambient air temperature of 40°. Based on data obtained by the Gor'kiy Automobile Plant, Table 1 presents the recommended stationary-engine power-output values for a number of engines. It is suggested that a section be included in the GOST covering truck-engine testing, which would indicate their stationary output. To attain the necessary engine

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UDC: 621.431.73:629.1-494.001.45



ACC NR: AP6019755

Table 1. Recommended stationary engine output values.

Make of engine	Rated output in hp		
		hp	Percent of rated output
GAZ-51 . . . .	70	18	25
GAZ-66 . . . .	120	50	42
ZIL-157 . . . .	104	52	50
URAL-375 . . . .	180	68	38
YamZ-236 . . . .	240	114	48

durability and cost effectiveness, recommendations are made to aid the organizations producing power-takeoff units and to assure correct engine operation. Orig. art. has: 5 figures and 2 tables.

SUB CODE: 13, 21/ SUBM DATE: none/ ORIG REF: 003/

Card 2/2

ZVEZDIN, I.

Improve the quality of correspondence courses. Phox.delo 5  
no.4:18 Ap '59. (MIRA 12:5)  
(Fire prevention--Study and teaching)

ZVEZDIN, N. (Leningrad)

New system of operational communications and signaling. Pozh.delo  
8 no.6:24-25 Je '62. (MIRA 15:6)  
(Fire departments--Equipment and supplies)

**ZVEZDIN, V., inzhener.**

**Gigantic thermometer. Tekh.mel.24 no.6:19 Ja '56. (MIRA 9:9)  
(Moscow--Thermometers)**

ZVEZDIN, Ya.K.

Improvement of techniques in the assembling of wheel-motor blocks.  
Elek.i tepl.tiaga 6 no.12:9-11 D '62. (MIRA 16:2)

1. Kontrol'nyy master sborochnogo tsekha Chelyabinskogo elektro-  
vozoremontnogo zavoda.

(Electric locomotives--Maintenance and repair)

L 1316-66 EWT(m)/EPF(c)/EWA(d)/T/EWP(t)/EWP(z)/EWP(h)/EWA(c) LJP(c)  
ACCESSION NR: AP5022172 MJW/JD/JH UR/0032/65/031/009/1107/1109  
543.51

AUTHOR: Belyakov, Yu. I.; Zverdin, Yu. I.

TITLE: Mass-spectrometric method of studying the hydrogen permeability of heat-resistant materials

SOURCE: Zavodskaya laboratoriya, v. 31, no. 9, 1965, 1107-1109

TOPIC TAGS: mass spectrometry, hydrogen, metal hydropemeability, chromium steel, heat resistant steel

ABSTRACT: An IMS nonmagnetic pulse mass spectroscopy is used to measure the permeability and diffusion of hydrogen through a specimen of Kh18N10T steel in the form of a membrane at 450-850C. A diagram of the diffusion cell employed is given. The permeability and diffusion increase with the temperature in accordance with the exponential relations  $P = P_0 e^{-E_P/RT}$  and  $D = D_0 e^{-E_D/RT}$ . Values of the activation energies  $E_P$  and  $E_D$  and the constants  $P_0$  and  $D_0$ , calculated by a graphic analytic method, are tabulated. The presence of weld joints holding the steel membrane between the ends of Kh18N10T tube holders is found to have no effect on the permeability of hydrogen. The mass spectrometric method makes it possible to

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L 1316-66

ACCESSION NR: AP5022172

determine the permeability, diffusion, and solubility of hydrogen in various materials over a wide range of pressures and temperatures, and to follow continuously the composition of the gas phase in the course of the measurements, which is an important advantage in studies of gas diffusion in metals. Orig. art. has: 2 figures and 2 tables.

ASSOCIATION: None

SUBMITTED: 00

ENCL: 00

SUB CODE: MM

NO REF SOV: 003

OTHER: 001

Card *mlr*  
2/2

BELIAKOV, Yu.I.; ZVEZDIN, Yu.I.

Mass-spectroscopic method for studying the hydrogen permeability of  
refractory materials. Zav. lab. 31 no.9:1107-1109 '65. (MIRA 18:10)



ZVEZDIN, Z.K., nauchnyy sotrudnik; BOGACHEVSKAYA, L.S., nauchnyy sotrudnik;  
VOLKOVA, N.F., mladshiy nauchnyy sotrudnik; KIM, M.P., doktor  
istoricheskikh nauk, red.; POLITOV, Z., red.; TYUNYEVA, A.,  
tekhn.red.

[First steps in the industrialization of the U.S.S.R., 1926-1927]  
Pervye shagi industrializatsii SSSR, 1926-1927 gg. Moskva, Gos.  
isd-vo polit.lit-ry, 1959. 532 p. (MIRA 12:5)

1. Akademiya nauk SSSR. Institut istorii. 2. Tsentral'nyy gosudarstvennyy arkhiv Oktyabr'skoy revolyutsii i sotsialisticheskogo stroitel'stva SSSR (for Zvezdin). 3. Institut istorii AN SSSR (for Bogachevskaya, Volkova).

(Russia--Industries)

LYAMIN, Yu.; UTKIN, E.; SVERDIUK, Sh.; AKOSTA, S.; BELOVA, A.; BALDYGA, N;  
GOL'D, A.; ZVEZDINA, A.; PASECHNIK, N.; SHEYNGAUZ, S.

Revolving credit. Den. i kred. 17 no. 4:52-61 Ap '59.  
(MIRA 12:8)

(Credit)

GARNISH, A.M.; SHAFRANSKIY, L.M.; DANILOVA, A.G.; KUZ'MINA, V.A.; Prinsipal'  
uchastnye: ZVEZDINA, E.A.; ISHCHERIKOVA, G.A.

Obtaining acrolein from a propane-propylene fraction. Nefteper. i  
neftekhim. no.10:26-28 '63. (MIRA 17:2)

1. Novokuybyshevskiy filial Nauchno-issledovatel'skogo instituta  
sinteticheskikh spirtov.

GARNISH, A.M.; SHAFRANSKIY, L.M.; SKVORTSOV, N.P.; ZVEZDINA, E.A.;  
STEPANOVSKAYA, V.F.

Catalytic oxidation of propylene to acrolein in the presence of  
water vapors. Kin.i kat. 3 no.2:257-260 Mr-Ap '62.

(MIRA 15:11)

1. Novokuybyshevskiy filial Nauchno-issledovatel'skogo instituta  
sinteticheskogo spirta.

(Propene) (Acrolein) (Water vapors)

ZVEZDINA, M.N.

There is a veterinarian on the state farm, Veterinariia 41 no.3:16-  
17 Mr '65. (MIRA 18:4)

1. Khabarovskoye proizvodstvennoye upravleniye Khabarovskogo kraya.

L 11621-66 ENT(1)

ACC NR: AP5025303

SOURCE CODE: UR/0061/65/019/004/0586/0596

AUTHOR: Men', A.N.; Sokolov, A.V.; Zvezdina, N.A.; Kurushin, Yu. N.;  
Nekoshnov, B.M.; Chudakov, V.S.

ORG: none

21.44.55  
TITLE: Determination of the energy spectrum of an impurity ion with an unfilled d-shell in a crystal

SOURCE: Optika i spektroskopiya, v. 19, no. 4, 1966, 583-596

TOPIC TAGS: crystal impurity, EPR spectrum, line splitting

ABSTRACT: The interpretation of energy spectra and EPR spectra of ions in various crystals requires the solution of a secular equation which takes into account the configuration of the ion and the symmetry of the intracrystalline field. In this paper, tables of matrix elements have been compiled which make it possible to write a secular equation at once for any term of any configuration in the case of an impurity ion with an unfilled d shell. These tables can also be used in studying EPR spectra if the field of lower symmetry produces a splitting comparable in order of magnitude to other perturbations (spin-orbital and exchange perturbations, etc.). As an example, the splitting of the principal card 1/2

UDC: 539.184.2:548.0.001.1

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L 14624-66  
ACC NR: AP5025303

terms D and F in fields of variable symmetry was analyzed. Data on the optical spectra of  $\text{Cr}^{3+}$  in  $\text{MgAl}_2\text{O}_4$  make it possible to determine local distortions caused by  $\text{Cr}^{3+}$  ion which replaces  $\text{Al}^{3+}$  ion at the octahedral sites of spinel. The data obtained are in good agreement with the experiment. Orig. art. has: 7 tables and 6 formulas.

SUB CODE: 20 / SUBM DATE: 28May64 / ORIG: 005 / OTH REF: 004

TS  
card 2/2

1. The first part of the document is a list of the names of the persons who were present at the meeting. The names are listed in alphabetical order. The names are: [illegible]



APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065710014-5  
APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065710014-5  
NOSKOV, N.S., kand. tekhn. nauk; TSAFENKO, Ye.P., kand. tekhn. nauk;  
ZVEZDKIN, A.S., inzh.; BRODSKIY, Z.I., inzh.

Control of liquid flow into a vessel using electrodes. Prom. energ.  
17 no.12:26-31 D '62. (MIRA 17:4)

ZVEZDIN, S.N., inzh.

Methods for drying peat fields for the winning of milled peat  
and means for their improvement. Torf.prom. 36 no.3:17-20  
'59. (MIRA 12:7)

1. Leningradskoye gorodskoye otdeleniye Gosudarstvennogo instituta  
po proyektirovaniyu zavodov osnovnoy khimicheskoy promyshlennosti.  
(Peat) (Drainage)

**ZVEZDKIN, V., master sporta**

**Racing canoe. IUn.tekh. 3 no.4:49-52 Ap '59.**

**(Canoes and canoeing)**

**(MIRA 12:4)**

"APPROVED FOR RELEASE: Thursday, September 26, 2002

CIA-RDP86-00513R002065710014-5

APPROVED FOR RELEASE: Thursday, September 26, 2002

CIA-RDP86-00513R002065710014-5"

ZVEZDKIN, V.I., inzh.; IZRAYELIT, G.B., inzh.; LOYTSYANSKAYA, M.G.,  
inzh.; NADEL'SON, R.G., inzh.

Effect of the dielectric properties of transformer oil  
on the strength of electric insulation of transformers.  
Elek.sta. 31 no.4:60-64 Ap '60. (MIRA 13:7)  
(Electric transformers) (Insulating oils)

ZVEZDKIN, V.N., inzh.; IZRAYELIT, G.B., inzh.

Authors' reply. Elek. sta. 34 no.3:90-91 Mr '63. (MIRA 16:3)  
(Electric transformers)

"APPROVED FOR RELEASE: Thursday, September 26, 2002  
APPROVED FOR RELEASE: Thursday, September 26, 2002

CIA-RDP86-00513R002065710014-5  
CIA-RDP86-00513R002065710014-5"

ZVEZDIN, V.N., inzh.; IZRAYELIT, G.B., inzh.; LOYTSYANSKAYA, M.G., inzh.

Permissible moisture level of electric transformer insulation.

Elek. sta. 33 no.10:60-62 0 '62.

(Electric transformers)

(MIRA 16:1)

STORIA, N.S., inzhener; TSUKERNIK, S.V., inzhener; LYSAKOVSKIY, G.I.,  
kandidat tekhnicheskikh nauk; ZVEZDEIN, V.M., inzhener; IZRAYELIT,  
G.B., inzhener; KOZYREV, N.A., kandidat tekhnicheskikh nauk;  
KULAKOVSKIY, V.B., kandidat tekhnicheskikh nauk; KARAMZIN, A.P.,  
inzhener; ALEKSEYEV, S.V., inzhener.

Electrical strength of stator winding insulation in 6-6.6 kv  
electric machines. Elek.sta. 27 no.4:38-51 Ap '56. (MLRA 9:8)

1. Khar'kovskiy elektromekhanicheskiy zavod (for TSukernik);
  2. Donbassenergo (for Lysakovskiy); 3. Lenenergo (for Izrayelit);
  4. LPI (for Kozyrev); 5. TSentral'naya nauchno-issledovatel'skaya  
elektrotekhnicheskaya laboratoriya (for Kulakovskiy); 6. Sverdlov-  
energo (for Karamzin); 7. Masenergo. (for Alekseyev).
- (Electric insulators and insulation--Testing)

VEZDAN, V.I., inzh.; IZRAELIT, G.B., inzh.; LOYTSYANSKAYA, M.B., inzh.

Determination of the permissible degree of moistening of transformer  
insulation. Elek.sta. 33 no.1:51-54 Ja '62. (MIRA 15:3)  
(Electric transformers--Windings)



8622

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S/104/60/000/004/001/001  
E194/E484

AUTHORS: Zvezdkin, V.I., Engineer, Izrayelit, G.B., Engineer,  
Loytsyanskaya, M.G., Engineer and Nadel'son, R.G.,  
Engineer

TITLE: The Influence of the Dielectric Properties of Transformer  
Oil on the Electric Strength of Transformer Insulation

PERIODICAL: Elektricheskiye Stantsii, 1960, No.4, pp.60-64

TEXT: Study of the insulation of transformers in service shows  
that the insulating properties often deteriorate quite quickly,  
although the electric strength remains high the power factor  
increases and the insulation resistance diminishes. As this has  
been due to impaired characteristics of the oil, thermo-syphon  
filters have been fitted to many transformers or the oil has been  
changed. However, these are both temporary or inadequate  
solutions and it was decided to study whether it was safe to leave  
transformers in service with oil of poor dielectric properties.  
Increase in the dielectric loss angle of transformer insulation  
caused by deterioration in the electrical properties of the oil  
causes additional heating of the insulation which could lead to

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The Influence of the Dielectric Properties of Transformer Oil on  
the Electric Strength of Transformer Insulation

breakdown. Normally dielectric losses in transformers are so small that they may be neglected in comparison with the iron and copper losses; however, these dielectric losses increase considerably as the power factor of the oil deteriorates in service. Calculations were made for a transformer of 100 MVA, 220/110/10 kV which showed that with new oil the losses of the solid dielectric were 5.22 kW and of the oil 0.763 kW, whilst with oil of  $\tan \delta = 93\%$  the losses of the solid insulation were 10.6 kW and of the oil 54 kW. It is considered that losses of this magnitude are not dangerous in a transformer of this size particularly as most of them occur within the oil where heat transfer conditions are good. Deterioration of the electrical properties of the oil has no influence on the short term electric strength. However, impairment of the electrical properties of the oil is accompanied by increase in the permittivity and calculations are made on the assumption that the permittivity of the oil rises from 2.1 to 4.5 at 60°C. It is shown that whereas the voltage gradient in the oil

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S/104/60/000/004/001/001  
E194/E484

# The Influence of the Dielectric Properties of Transformer Oil on the Electric Strength of Transformer Insulation

then diminishes from 38 to 35 kV/cm the gradient in the bakelite rises from 16.1 to 31.4 kV/cm. However, this is not considered to be dangerous. The increased stress in paper board is less because it is more highly impregnated with oil. Thus, the calculations reveal no special risk in allowing transformers with oil of high power factor or low resistivity to continue in service. Tests were made on various transformers filled alternatively with fresh and deteriorated oil, large power transformers could not be used for these tests but instrument transformers and a smaller power transformer were used. The values of breakdown voltage were determined for the case of thermal breakdown with the transformer insulation at a temperature not below 95°C. The temperature was maintained by the use of a special heated chamber. At 20°C, the properties of the used oil were  $\tan \delta = 7\%$ , resistivity  $4.55 \times 10^{11}$  ohm cm and at 80°C  $\tan \delta = 90\%$ , resistivity  $3.2 \times 10^{10}$  ohm cm, the corresponding values for fresh oil were: at 20°C,  $\tan \delta = 0.1\%$ , resistivity =  $3.2 \times 10^{14}$  ohm cm

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S/104/60/000/004/001/001  
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The Influence of the Dielectric Properties of Transformer Oil on  
the Electric Strength of Transformer Insulation

and at 80°C,  $\tan \delta = 0.5\%$ , resistivity =  $1.88 \times 10^{13}$  ohm cm. The tests on the two types of instruments, transformer and the power transformer, are described and tests results are plotted in Fig. 2, 3, 4 and 5. It is concluded that in each case, the minimum value of voltage at which thermal breakdown would commence with fresh and used oil is either the same or so little different as not to matter. Where there is a difference, the insulation temperature is in fact much higher than would be observed in service. It is concluded that power transformers in service have sufficient reserve of insulation strength for there to be no special risk in continuing to use oil of impaired properties. The above calculated and experimental data are confirmed by reliable service experience of a number of large transformers, details of which are given. Table 2 gives properties of the oil in a number of German transformers both initially and after six years operation before major overhaul. During this service period the dielectric properties of the winding insulation had deteriorated by

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The Influence of the Dielectric Properties of Transformer Oil on  
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a factor of 5 to 8 as compared with the initial values. The power system still has in service 7 large transformers in which the power factor of the oil is greatly in excess of the standard value. It is concluded that it is permissible to leave large transformers in service if the oil has high power factor or low resistivity, but is not wet, until the next major overhaul. However, this is no justification either for not replacing such deteriorated oil in transformers after overhaul or in relaxing the requirements on the oil refineries. There are 5 figures, 3 tables and 7 references: 4 Soviet, 2 English and 1 German.

"APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065710014-5"  
"APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065710014-5"  
GERASIMOV, V.N., inzh.; ZVEZDIN, Y.N., inzh.; IZRAVELIT, G.B., inzh.  
MOKEYENKO, I.Ye., inzh.

More on the testing of insulation of large electric machines.  
Elek.sta. 29 no.6:67-70 Jo '58. (MIRA 11:9)  
(Electric insulators and insulation--Testing)

**ZVEZDIN, Z.K.**, nauchnyy sotrudnik; **ROGACHEVSKAYA, L.S.**, nauchnyy sotrudnik;  
**BAJEVSKIY, D.A.**, redaktor; **POLYAKOVA, N.**, redaktor; **MUKHIN, Yu.**,  
tekhnicheskiiy redaktor

[Political and industrial gains of the working class of the Soviet Union (1928-1929); a collection of documents] Politicheskii i trudovoi pod'em rabochego klassa SSSR (1928-1929 gg.); [sbornik dokumentov. Pod red. D.A.Baevskogo.] Moskva, Gos. izd-vo polit. lit-ry, 1956. 611 p. (MLRA 9:9)

1. Akademiya nauk SSSR. Institut istorii. 2. Tsentral'nyy Gosudarstvennyy arkhiv Oktiabr'skoy revolyutsii i sotsialisticheskogo stroitel'stva (for Zvezdin) 3. Institut istorii Akademii nauk SSSR (for Rogachevskaya)  
(Labor and laboring classes)

KAGAN, Yu.B.; BASHKIROV, A.N.; ZVEZDKINA, L.I.; ORLOVA, N.A.

Fused iron catalysts in the synthesis of higher alcohols from carbon monoxide and hydrogen. Trudy Inst.nefti 12:200-212 '58.

(MIRA 12:3)

(Alcohols) (Catalysts)



ZVEZDINA, L.P.; BAT'KOV, A.I.

BIM factory practices. Tekst.prom. 16 no.11:44-46 N '56.

(MLRA 9:12)

1. Direktor fabriki Bol'shaya Ivanovskaya manufaktura (for Zvezdina)
2. Glavnyy inzhener fabriki Bol'shaya Ivanovskaya manufaktura (for Bat'kov).

(Textile industry)

ZHURAVSKAYA, S.A.; ZVEZDINA, T.V.

Phytocidal action of some acaricides and insecticides on the  
cotton plant. Trudy Inst. zool. i paraz. AN Uz SSR 6:65-75  
'56. (MIRA 10:6)

(Plants, Effect of insecticides on)  
(Uzbekistan--Cotton--Diseases and pests)

AID P - 629

Subject : USSR/Electricity

Card 1/1 Pub. 27 - 33/35

Authors : Volobrinskiy, S. D., Kand. of Tech. Sci., Dotsent  
and Zvezdkin, M. N., Eng., Leningrad

Title : I. Ya. Ryshkovskiy and K. G. Kuchma; "Traction  
Substations", 487 pp., 1953 (Bibliography)

Periodical : Elektrichestvo, 8, 94-95, Ag 1954

Abstract : An extensive review of the book with some criticism  
is presented.

Institution : Leningrad Institute of Engineers of Railroad Transportation

Submitted : No date

AID P - 2019

Subject : USSR/Electricity

Card 1/1 Pub. 27 - 23/31

Authors : Volobriniski, S. D., Kand. of Tech. Sci., Dotsent,  
Zvezdkin, M. N., Eng., Leningrad

Title : Book Traction Substations (Book Review by  
S. D. Volobriniski and M. N. Zvezdkin, this journal,  
No.8, 1954) (Discussion)

Periodical : Elektrichestvo, 4, 82-83, Ap 1955

Abstract : The authors repeat their previous criticisms of this  
book. They point out, for example, that some of the  
illustrations in the book were taken from out of date  
foreign literature. They sustain their original  
criticism and evaluate the book as not corresponding  
to the requirements of a textbook for higher institutes  
of learning.

Institution: Leningrad Institute of Engineers of Railway Transportation

Submitted : No date

AID P - 2950

*Zvezdkin, M. N.*  
Subject : USSR/Electricity

Card 1/1 Pub. 27 - 15/15

Author : Zvezdkin, M. N., Eng.

Title : Scientific-technical conference on railroad electrification

Periodical : Elektrichestvo, 8, 86, Ag 1955

Abstract : The conference took place in the Leningrad Institute of Engineers of Railroad Transportation in June 1955. The author summarizes the discussions and gives a list of reports with the names of reporters.

Institution : None

Submitted : No date

~~ZVEZDKIN, P.K.~~

The use of "Plans of the arable land of collective farms" in  
physical geography classwork. Geog. v shkole 21 no. 1:51-52 Ja-F '58.  
(MIRA 11:7)

1. Dubrovinskaya shkola Kostromskoy oblasti.  
(Physical geography--Study and teaching)

Defects in type VM-35 cutout switches. Elek.sta. 28 no.8:75-76  
Ag '57. (MIRA 10:10)  
(Electric cutouts)

**ZVEZDKIN, V.H., inzhener; IZRAELIT, G.B., inzhener.**

Replacing windings of large electrical machines. Elek. sta. 25 no.8:  
33-35 Ag '54. (MLRA 7:9)  
(Electric machinery--Maintenance and repair)



Testing the insulation of large transformers. Elektrichestvo  
no.7:70-73 J1 '56. (MLRA 9:10)

1. Lenenergo.  
(Insulating oils) (Electric transformers)

**ZVEZDKIN, V.N., inzhener; IZRAYELIT, G.B., inzhener.**

Testing the insulation of large electric machines. Elek.sta.27 no.6:  
32-35 Je '56. (MIRA 9:9)  
(Electric insulators and insulation--Testing)

1. ZVEZDKIN, V.N.; NADEL'SON, R.G.
2. USSR (600)
4. Electric Transformers
7. Effect of the properties of oil on the characteristics of transformer insulation,  
Eng. V.N. Zvezdkin, R.G. Nadel'son, Elek.sta. 24 no. 3, 1953.

9. Monthly List of Russian Accessions, Library of Congress, APRIL 1953, Uncl.

ZVEZDKIN, V.N.; NAMEL'SON, R.O.

Measurement of leakage currents in transformers. Elekt. Stantsii, '52,  
No.12, 32-4. (MLRA 6:1)  
(EEA 56, no.666:2492 '53)

1. ZVEZDIN, V. N. ENG. LOTSYANSKAYA, M. G. ENG.
2. USSR (600)
4. Electric Insulators and Insulation
7. Frost resistance of sealing material. Elek. sta. 23, no. 10, 1952.

9. Monthly List of Russian Accessions, Library of Congress, February 1953. Unclassified.

ZVEZDKIN, V.N., inzhener; IZHAYBLIT, G.B., inzhener,

Problem of testing the insulation of large electrical machines.  
Elektrichestvo no.2:64-67 P '54. (MLRA 7:2)

1. Lenenergo. (Electric insulators and insulation--Testing)

ZVEZDKIN, V. N. and NADEL'SON, R. G. Calculating Leakage Currents in Transformers  
(Ob Izmerenii Tokov Utechki v Transformatorakh), pp. 32-34

The authors, analyzing many high-voltage laboratory experiments with transformer insulation, conclude that the leakage measurements do not present any advantage over the insulation resistance tests made with a megger. (Graphs and tables).

SO: ELEKTRICHESKIY E STANTSII, No. 12, Dec. 1952, Moscow (1614306)

Problem of testing the insulation of large electrical machines.  
Elektrichestvo no.2:64-67 F '54. (MLRA 7:2)

1. Lenenergo. (Electric insulators and insulation--Testing)



USSR/Chemistry - Isotopes

11 Sep 53

"The Influence of Pressure on the Velocity of Ionic Reactions of Isotope Exchange," M. B. Neyman, M. G. Gonikberg, V. B. Miller, Yu. M. Shapovalov and V. S. Zvezdkin, Inst Of Chem Phys and Inst of Org Chem, Acad Sci USSR

DAN SSSR, Vol 92, No 2, pp 365-368

Studied the effect of pressure on the reaction velocity of isotope exchange in reactions of propyl iodide with active iodide ions and of propyl bromide with active bromide ions at 19° and pressures of 1, 1500, and 2400 atm. Used also solns of NaI<sup>131</sup> and NaBr<sup>82</sup> as source of halogen ions. Found that the formation of an activated complex in these reactions is associated with a decrease in the volume of the complex characteristic for normal bimolecular reactions.

269T20

**ZVEZDKIN, V.V., inzh.; LOYTSYANSKAYA, M.O., inzh.**

**Defects of bituminous compositions for high-voltage bushings.  
Elek.sta.29 no.3:62-64 Mr '58. (MIRA 11:5)  
(Electric insulators and insulation)**

ZVEZDKINA, A.S., starshiy nauchnyy sotrudnik

Effect of molybdenum on spring and winter vetch yields. Zemledie  
7 no.7:48-49 J1 '59. (MIRA 12:9)

1. Vladimirskaia gosudarstv.sel'skokhoz.opytная stantsiya,  
(Vetch) (Molybdenum)

ZVEZDKINA, A. S.

27816. Zvezdkina, A. S. Napravlennoye Vospitaniye skorospelosti u yarovoy viki. Seleksiya i semenovodstvo, 1949, No. 9, s. 36-38

SO: Letopis' Zhurnal'nykh Statey, Vol. 37, 1949

ZVEZDKINA, A. S.

Zvezdkina, A. S. "Perennial grasses," In symposium: Nauch. otchet Tulun. gos. selekts. stantsii za 1941-1944 gg., Moscow, 1948, p. 85-98

SO: U-3264, 10 April 53 (Letopis 'Zhurnal 'nykh Statey, No. 4, 1949).

5(3), 22(4)

DATE/TIME RECEIVED FOR POSTAL DELIVERY

**Abkasheniya naok 886.R. Institut nart'i**

Evdy, t. 12 (Transactions of the Petroleum Institute, USSR, Academy of Sciences, Vol 12) Moscow, Izd-vo AN SSSR, 1958. 395 p. Errata slip inserted. 1,700 copies printed.

Ed.: S. L. Bertiyenko, Professor; Ed. of Publishing House: K. G. Klyassov; Tech. Ed.: V. V. Golubova.

**RUSSOON!** The book is intended for scientists, engineers, and technicians in the petroleum industry.

**NOTE:** This collection of articles describes the results of studies on the chemistry and technology of petroleum and gas conducted in the laboratories of the Petroleum Institute, Academy of Sciences, USSR, in 1956 and 1957. A new section "Petroleum, Hydrogen and Technology of Petroleum" has been included in the collection of articles. A list of investigations published by the scientists of the Institute in 1956 and 1957 and a list of references for the literature of the period of the Academy of Sciences, USSR, for 1957 are given.

**Changes in the Activity of Silica Gel in the Chromatographic Separation of Hydrocarbons**

### III. CATALYSTS AND CATALYTICS

Reagan, R. L., A. A. Rehak, L. A. Rehak, and R. A. Orloff, *Fused*  
*Aluminum Catalysts for the Synthesis of Light Alcohols from Carbon Monoxide*  
*and Hydrogen* 500

Smolnikov, A. N., Ye. V. Kuznetsova, and Yu. I. Kuznetsov. Some Characteristics of the Decomposition of Carbon Monoxide into C and CO<sub>2</sub> in the Presence of Reduced Iron Catalysts. 273

seum, Va. 2., A. I. Baskin, R. M. Jolley, L. G. Hargrove, and A. G. Levan. Effect of Added Ferroalloys on the Activity and Stability of Pused Iron Catalysts for the Synthesis from  $\text{CO}_2$  and  $\text{H}_2$ . 228

Smeshchikov, A. M., and V. I. Moravk. Study of Conditions of Synthesis from  
o-Toluen Monoxide and Nitrogen in the Presence of Talc Catalysts

Vol. 61, No. 3, A. A. Ya. Rosovskiy, and V. V. Khabatov. Method of Kinetic Conversions of Continuous Cessation Reactions

Probst, J. V., A. Ya. Rosovskiy, and V. V. Shchetin. Intradiolysis  
of Ketones in Catalytic Reduction of Ethyl Alcohol

Severnykh, P. V., and V. V. Chubel's. *Adaptive Properties of  
Human Reactions and Attention*. Moscow, 1966.

Yakovleva, P. V., and V. V. Gubelina. Activity and Structure of  
Lactam Oxides and the Lactam Properties

1930] *W. V. F. and V. V. Shubert, Anomalous Values of the Energy*  
*of the First Two Levels of the Hydrogen Atom*

**Streamlined Pipes and V. N. Karicheva.**  
**Corrosion of Steels in Gaseous Phase**

## IV. TECHNOLOGY OF PETROLIUM AND PETROCHEMICAL SYNTHESIS 25

Y. V. A. Z. Babitov, and H. Marquies. Study of the Process of  
Continuous Oxidation of Paraffinic Hydrocarbons to Alcohols 261

neolina, V. V., A. E. Baskitov, and M. Martynov. Investigation of the Effect of Boric Acid and Boric Anhydride on the Liquid Phase Oxidation

Paraffinic Hydrocarbons

287

M. M. Zubairov, Synthesis of Butyl Alcohol Containing the Radioactive Isotopes,<sup>Cl</sup>  
Zhukhin, Ya.-M., and L. V. Gelsova, Manufacture of Acetonitrile by the

OVER, K. K. [deceased], A. V. Meryubinski, P. G. Anan'yev, N. N. Arsen'yev. Low-Temperature Oxidative Nitroreduction of Nitroarenes with Aromatic Hydrocarbons with Ammonia in the Presence of Platinum as Catalyst

Robashvili, Ya. A., A. R. Brun-Tschikovy, Efficient Technology of  
Case Conversion

KAGAN, Yu.B.; BASHEIROV, A.N.; ZVEZDEKINA, L.I.; ORLOVA, N.A.; KLIGER, G.A.

Influence of reduction conditions on the properties of molten  
iron catalysts used in alcohol synthesis from carbon monoxide  
and hydrogen. Trudy inst. nefti. 10:262-268 '57. (MIRA 11:4)  
(Alcohols) (Carbon monoxide) (Hydrogen)

Use of the calculation-analytical method in studying the synthesis  
of hydrocarbons and oxygen-containing compounds from carbon monoxide  
and hydrogen. Trudy Inst. nefti no.6:151-158 '55. (MLRA 8:12)  
(Oxygen compounds) (Hydrocarbons)



USENKO, Vladimir Andreyevich, prof., doktor tekhn. nauk; ZABELOTSKIY,  
Lazar' Markovich, kand. tekhn. nauk; KUNTSEVICH, V.A., inzh.,  
retsenzent; ZVEZDKINA, Ye.V., inzh., retsenzent; IHRAGIMOV,  
S.S., kand. tekhn. nauk, retsenzent; SHTEYNQART, M.D., red.;  
BATYREVA, G.G., tekhn. red.

[Silk technology] Tekhnologiya shelka. Pod red. V.A.Usenko.  
Moskva, Izd-vo nauchno-tekhn. lit-ry RSFSR. Pt.2. [Silk spin-  
ning] Shelkopriadenie. 1961. 343 p. (MIRA 15:2)  
(Silk) (Spinning)

ZVEZDOV, I.M., inzh.; VANYAYEV, N.A., inzh.

Production-line construction of electrolysis shops.  
Prom. stroi. 40 no.9:2-6 '62. (MIRA 15:11)

1. Trest Kuznetskpromstroy.  
(Aluminum plants)  
(Concrete construction)

4

APPROVED FOR RELEASE Thursday, September 26, 2002 CIA-RDP86-00513R002005710014-5  
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4

Simultaneous Tension and Torsion of a  
Cylindrical Bar in the Elastic-Plastic Range  
by J. D. Achenbach and J. L. Doolittle  
J. Appl. Mech. 2, 1955 pp 51-55

*[Handwritten signature]*

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R0020065710014-5  
APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R0020065710014-5

APPROVED FOR RELEASE: Thursday, September 26, 2002      CIA-RDP86-00513R002065710014-5

KHANOVICH, I.G.; ZVEZDNYI, A.M.,      otv. red.; GAL'CHINSKAYA, V.V.,  
tekhn. red.

[Potential interference rejection of telecommunication systems] Potentsial'naya pomexhoustoichivost' sistem svyazi; 'uchebnoe posobie. Leningrad, Leningr. elektrotekh. in-t svyazi, 1962. 78 p. (MIRA 16:10)  
(Telecommunication) (Information theory)

9.3200

26636  
S/044/60/000/003/008/012  
C111/C222

AUTHOR: Zvezdnyy, A.M.

TITLE: The representation of the series  $\sum_{n=1}^{\infty} e^{-rn^2} \frac{\cos nx}{\sin nx}$  in a closed form

PERIODICAL: Referativnyy zhurnal. Matematika, no.3, 1960, 161, abstract 3492 (Tr. Leningr. elektrotekhn. in-ta svyazi, 1958, vyp.3 (36), 105-110)

TEXT: The following approximate formulas are given:

$$\begin{aligned}\sum_{n=1}^{\infty} \frac{\cos nx}{e^{rn^2}} &\approx \frac{\cos x - e^{-2r}}{e^r + e^{-2r} - 2e^{-r} \cos x}, \\ \sum_{n=1}^{\infty} \frac{\sin nx}{e^{rn^2}} &\approx \frac{\sin x}{e^r + e^{-2r} - 2e^{-r} \cos x}, \\ \sum_{n=1}^m \frac{\cos nx}{e^{rn^2}} &\approx \frac{[1 + e^{-3r(m+1)}] \cos x - e^{-2mr} \cos 2x - e^{-2r}}{e^r + e^{-2r} - 2e^{-r} \cos x}, \\ \sum_{n=1}^m \frac{\sin nx}{e^{rn^2}} &\approx \frac{[1 - e^{-3r(m+1)}] \sin x - e^{-2mr} \sin 2x}{e^r + e^{-2r} - 2e^{-r} \cos x}.\end{aligned}$$

These formulas can be used for the calculation of the transition processes in long circuits with losses.

Card 1/1. [Abstracter's note: Complete translation.]

ZVEZDOV, I.M.

Correspondence of building plans and supply centers for the construction industry. Trudy MIRI no.15:157-159 '61.

(MIRA 14:12)

1. Nachal'nik stroitel'no-montazhnogo upravleniya tresta Cherepovetsmetallurgstroy.

(Building materials industry)

2306. CHANGES OF THE PERIPHERAL BLOOD AND BONE MARROW IN  
THYROTOXICOSIS (Russian text) - Zviadadze G. A. - PROBL. ENDOKR.  
1958, 4/2 (60-65) Tables 5

The changes of the peripheral blood and bone marrow which take place before and after the surgical treatment of thyrotoxicosis were studied. Hypochromic anaemia is a frequent symptom in thyrotoxicosis. Lymphocytosis and thrombocytopenia are, likewise, noted. The ESR is usually increased. An increased number of leucoblasts is found in the bone marrow. The number of normoblasts is either normal or diminished. Megakaryocytes are frequently absent. Both the peripheral blood and the bone marrow return to a normal condition after the surgical treatment of thyrotoxicosis.

(III, 6)



Changes in the bone marrow following thyrotoxicosis. Soob. AN  
Grus.SSR 18 no.2:237-240 P '57. (MIRA 10:7)

1. Akademiya nauk Gruzinskoy SSR, Institut eksperimental'noy i  
klinicheskoy khirurgii i gematologii, Tbilisi. Predstavleno  
akadmirom I.D. Eristavi.

(Marrow)

Changes in peripheral blood during thyrotoxicosis. Soob. AN Gruz.  
SSR 20 no. 2:241-243 F '58. (MIRA 11:7)

1. AN Gruz SSR, Institut eksperimental'noy i klinicheskoy khirurgii  
i gematologii, Tbilisi. Predstavleno akademikom K.D. Bristavi.  
(THYROID GLAND--DISEASES)  
(BLOOD--ANALYSIS AND CHEMISTRY)

ZVIADADZE, G.A.

Changes in the peripheral blood following surgical treatment of  
thyrotoxicosis. Soob. AN Gruz. SSR 20 no. 4:505-506 Ap '58.

(MIRA 11:7)

1. Institut eksperimental'noy i klinicheskoy khirurgii i gematologii  
AN GruzSSR, Tbilisi. Predstavleno akademikom K.D. Eristavi.

(THYROID GLAND--SURGERY)

(BLOOD--ANALYSIS AND CHEMISTRY)

Changes in the bone marrow following the surgical treatment of  
thyrotoxicosis. Soob. AN Gruz.SSR 18 no.4:473-474 Ap '57.  
(MLRA 10:7)

1. Akademiya nauk Gruzinskoy SSR, Institut eksperimental'noy i  
klinicheskoy khirurgii i gematologii, Tbilisi. Predstavleno  
akademikom K. D. Kristavi.

(MARROW) (THYROID GLANDS--SURGERY)

ZVIADABE, G. E., Cand. of Agric Sci. -- (diss) "On the problem of the study of the biologi-  
coecology of mulberry trees under eastern Georgian conditions." Tbilisi, 1957, 28 pp,  
Georgian Agricultural Institute), 100 copies (KL, 29-57, 92)

S/598/60/000/004/017/020  
D217/D302

AUTHORS: Zviadadze, G.N. and Chizhikov, D.M.  
TITLE: Study of cathode polarization in NaCl-KCl-TiCl<sub>3</sub> melts  
SOURCE: Akademiya nauk SSSR. Institut metallurgii. Titan i yego  
splavy. No. 4, Moscow, 1960. Metallurgiya titana, 153-157

TEXT: The polarization during electrolysis of a solution of TiCl<sub>3</sub> in an equimolecular solution of NaCl and KCl was determined by plotting I-V curves. The purpose of this work was to study the polarization for those cathode current densities within the limit of which electrolysis in titanium chloride melts is carried out in laboratory and industrial vats. The apparatus for plotting I-V curves is shown in Fig. 1. The cell for taking measurements was placed in a steel container with a water-cooled flange and lid. A mixture of NaCl and KCl was melted and a vapor-gas mixture of TiCl<sub>4</sub> and argon was introduced into the cell containing the melt, on the bottom of which a weighed quantity of Ti

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powder had been placed. After adding the required weight of  $TiCl_4$ , the thermocouple and sheath were removed from the container and some of the melt was sucked into an opening in the porcelain tube, where it froze, and was removed for analysis. During this period, excess argon was supplied to the container in order to ensure better protection of the metal against oxidation. After preparing the melt, electrodes were lowered into the cell, connected up, and measurements were started. The accumulator voltage was supplied to the commutator terminals, and from there, through a rheostat and a potentiometer to the electrodes. After the measurements were completed, the melts were re-analyzed to estimate the change in composition occurring within the period of experiment. The temperature in the furnace was kept constant by the potentiometer. The geometrical dimensions of cathode and anode and their ratio in the cell used, corresponded to the cathode polarization study. A molybdenum wire of 1.6 cm diameter was used as the cathode; this was placed along the vertical axis inside a graphite cylinder of 7.3 cm diameter and 19 cm length, which was made the anode. The ratio

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between anode and cathode surface area was 137. Owing to the insignificantly low anodic current density, the anode behaved as a virtually non-polarizing electrode, and it was, therefore, used as a reference electrode. The electrodes were separated by means of a bung having an opening at the bottom and being concentrically placed between the anode and the cathode. Measurements were carried out at 730° and 830°C, these being the most characteristic temperatures for the electrolysis of sodium, potassium and titanium chloride solutions. The concentration of lower-valency Ti in the melt did not exceed 3-4 wt.%. It was found that the potential, extrapolated to zero current density, decreased with increasing temperature. The influence of the lowest valency Ti, particularly at 830°, is insignificant. It is suggested that discharge of Ti ions and alkali metal occurs alternately during electrolysis at the cathode current densities investigated. There are 3 figures, 2 tables and 1 Soviet-bloc reference.

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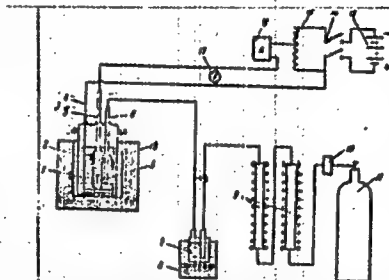


Study of cathode ...

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Layout of apparatus for plotting I-V curves;

1 - cell; 2 - hermetic steel container; 3- cathode; 4 - anode wire;  
5 - diaphragm; 6 - tube for supplying the tetrachloride; 7 - container  
with tetrachloride; 8 - oil bath; 9 - furnaces for the purification of  
argon; 10 - galvanometer; 11 - argon bomb; 12 - furnace; 13 - accumula-  
tor; 14 - key; 15 - rheostat; 16 - ammeter; 17 - voltmeter.



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Fig. 1. Scheme of the apparatus for plotting I-V curves.  
1 - cell; 2 - hermetic steel container; 3 - cathode; 4 - anode wire; 5 - diaphragm;  
6 - tube for supplying the tetrachloride; 7 - container with tetrachloride; 8 - oil bath;  
9 - furnaces for the purification of argon; 10 - galvanometer; 11 - argon bomb; 12 - furnace;  
13 - accumulator; 14 - key; 15 - rheostat; 16 - ammeter; 17 - voltmeter.

ZVIADADZE, G.N.; RTSKHILADZE, V.G.

Thermodynamics of arsenopyrite decomposition. Soob. AN Gruz.  
SSR 33 no.1:175-181 Ja '64. (MIRA 17:7)

1. Institut metallurgii AN Gruzinskoy SSR, Tbilisi. Predstav-  
leno akademikom F.N. Tavadze.

RTSKHILADZE, V.G.; ZVIALADZE, G.N.

Sublimation of arsenic from arsenopyrite ores of Tsani formation and the condensation of its vapors. Soob. AN Gruz. 34  
no.1:127-134 Ap'64 (MIRA 17:7)

1. Gruzinskiy metallurgicheskii institut. Predstavleno akademikom F.N. Tavadze.

S/598/60/000/004/020/020  
D217/D302

AUTHORS: Zviadadze, G.N., Karyazina, I.N. and Chizhikov, B. M.  
TITLE: On studying the cyclic electrolysis of titanium tetrachloride  
SOURCE: Akademiya nauk SSSR. Institut metallurgii. Titan i yego splavy. No. 4, Moscow, 1960. Metallurgiya titana, 184-190

TEXT: Electrolytes containing lower-valency titanium chloride were prepared in graphite vessels, in which mixtures of titanium chloride and powder were placed. After melting the chlorides and subsequently blowing argon through the melt, a vapor-gas mixture of argon and titanium tetrachloride was supplied to the bottom of the graphite vessel. In a number of experiments,  $TiCl_4$  without argon was supplied to the melt. In this case,  $TiCl_4$  was delivered through a burette, whose end was joined to a graphite tube which was immersed in the melt. In these experiments, the surface of the melt was protected with argon. On finishing the experiments, the melt was allowed to freeze under an argon atmosphere and

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On studying the cyclic ...

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was submitted to chemical analysis. Di- and trivalent titanium were analyzed as follows: After grinding and mixing the electrolyte, two portions were withdrawn and weighed. The first was dissolved in a 20% solution of iron-ammonium alum, and the second was dissolved in 10 N HCl (or in 5% HCl with subsequent acidification with 10 N HCl). To the first solution,  $H_2SO_4$  (1:3) was added until the color of the solution changed from brown to green, after which this solution was titrated with 0.1 N  $K_2CrO_4$  solution in the presence of phenyl antropic acid. The second solution, after addition of  $H_2SO_4$  (1:3) was also titrated with 0.1 N  $K_2CrO_4$  solution in the presence of the same indicator. If  $V_1$  is the volume, in ml, of  $K_2CrO_4$  solution, used up in the titration of the first solution (calculated per gram of the weighed portion) and  $V_2$  is the volume, in ml, of  $K_2CrO_4$  solution used up in the titration of the second solution (also as calculated per 1 g of the weighed portion), then the following equation can be set up:  $0.0024x + 0.0048(V_1 - x) = 0.0048V_2$

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On studying the cyclic ...

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where  $x$  is the volume of  $K_2CrO_4$  solution (in ml) used up in the titration of the divalent titanium only. For investigating the electrolysis of melts produced by chlorination of titanium by its tetrachloride, a two-stage scheme was adopted, i.e. titanium was at first chlorinated and then electrolytically deposited from the melts produced in the same vessel. Graphite vessels were used for the experiments, which were charged with a mixture of NaCl, KCl and Ti. After melting the electrolyte and supplying the vessel with the required quantity of  $TiCl_4$ , the melt obtained was electrolyzed without a further  $TiCl_4$  supply.

Molybdenum wire of 2 mm diameter was used as the cathode and the non-working portion was protected by a porcelain tube. Initially a graphite rod of 15 mm diameter was used as the anode. Subsequently, the surface of the graphite vessel was used as the anode. After the experiment, the melt together with the products of electrolysis were frozen and subjected to phase separation. The experiments have shown that it is possible to obtain titanium by electrodeposition from melts produced by chlorination of titanium by its tetrachloride. An X-ray analysis of the

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On studying the cyclic ...

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electrodeposited powders, after treatment of the latter with a 5% HCl solution, confirms that they consist of metallic titanium and donot contain metallic oxides. There are 5 tables and 2 Soviet-bloc references.

S/826/62/000/000/006/007  
D408/D307

AUTHORS:

Budnevskiy, A.M., Li Hsi-ch'ang, Chizhikov, D.M.  
and Zviadadze, G.N.

TITLE:

Special features of the behavior of molten titanium  
dichloride and its role during electrolysis

SOURCE:

Fizicheskaya khimiya rasplavlennykh soley i shlakov;  
trudy Vses. soveshch. po fiz. khimii raspl. soley  
i shlakov, 22 - 25 noyabrya 1960 g. Moscow. Metall-  
urgizdat, 1962, 344 - 352

TEXT:

The properties of KCl-NaCl melts containing  $TiCl_2$ ,  
their stability in the presence of quartz, graphite, Fe and Ti and  
their behavior during electrolysis were studied, since such melts  
facilitate the production of large Ti crystals.  $TiCl_2$  was prepared  
in an apparatus consisting mainly of a quartz tube divided into two  
chambers by a perforated plate, the upper chamber being heated to  
1050 - 1070°C and the lower to 800°C. Argon and  $TiCl_4$  were introduced  
into the upper chamber which contained compressed Ti shavings. The

Card 1/3



Special features ...

S/826/62/000/000/006/007  
D408/D307

produced molten  $\text{TiCl}_2$  passed through the perforated plate and was collected in a graphite beaker in which it solidified. Analysis showed that the  $\text{TiCl}_2$  was free from trichloride. Stability of the melts was investigated in crucibles made from the test materials, finding that it was least in quartz and greatest in Ti crucibles. A portion of the  $\text{KCl-TiCl}_2$  system (up to 20 mol%  $\text{TiCl}_2$ ) was thermographically investigated both in Fe and in Ti crucibles; the results obtained in Fe crucibles were significantly different from those obtained in Ti crucibles. The stabilizing effect of Ti was used for the development of a method for the electrolytic production of Ti; lower chlorides of Ti in a molten alkali metal chloride melt are electrolyzed, the melt composition being maintained constant by reduction of  $\text{TiCl}_4$  with metallic Ti. The electrode processes consist of discharge of  $\text{Cl}^-$  and  $\text{Ti}^{2+}$  or  $\text{Ti}^{3+}$  ions; in the first case, 1 of each 2 g-atoms of obtained Ti, and in the second case, 1 in every 4 g-atoms, is returned to the cycle. In either case, four Faradays of electricity and one mole of  $\text{TiCl}_4$ , as also during the electrolysis of  $\text{TiCl}_4$ , are consumed in the production of one g-atom of non-recycled Ti. During the electrolysis

Card 2/3

Special features ...

S/826/62/000/000/006/007  
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the  $\text{TiCl}_2$  content of the melt remained approximately constant, whereas the  $\text{TiCl}_3$  content decreased continuously; this was due to the presence of the metallic phase in the catholyte, enabling the reaction  $\text{Ti} + 2\text{TiCl}_3 \rightarrow 3\text{TiCl}_2$  to proceed. The cathodic deposit consisted of an inner bright spongy layer, almost free from salts, of relatively coarse particles which adhered together comparatively strongly, and of an external dark grey spongy layer, impregnated with salts, which crumbled into fine powder when the salts were washed away. There are 5 figures and 3 tables.

ASSOCIATION: Institut metallurgii AN SSSR (Institute of Metallurgy AS USSR)

✓

Card 3/3

800/4-A-5559  
800/455-5559

1) Science] Moscow, 1979, p. 5) Error in title.

WILLIAM A. A. BAYBERRY.

### Large and small

medical science, and  
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## Medical

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### How Wide

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"The Use of Radioactive Selenium for Investigating the Sulfur-selenium System"

Isotopes and Radiation in Chemistry, Collection of papers of  
2nd All-Union Sci. Tech. Conf. on Use of Radioactive and Stable Isotopes and  
Radiation in National Economy and Science, Moscow, Izd-vo AN SSSR, 1958, 380pp.

This volume published the reports of the Chemistry Section of the  
2nd AU Sci Tech Conf on Use of Radioactive and Stable Isotopes and Radiation  
in Science and the National Economy, sponsored by Acad Sci USSR and Main  
Admin for Utilization of Atomic Energy under Council of Ministers USSR  
Moscow 4-12 Apr 1957.

CHIZHIKOV, D.M.; ZVIADADZE, G.N.; KORSUNSKAYA, V.N.

Interaction of titanium tetrachloride with its dioxide in  
presence of carbon. Tsvet. met 33 no. 12:42-46 D '60.

(MIRA 13:12)

(Titanium--Metallurgy)

ZVIADADZE, G.N.; CHIZHIKOV, D.N.

Studying cathodic polarization in  $\text{NaCl} - \text{KCl} - \text{TiCl}_3$  melts. Titan  
i ego splavy no. 4:153-157 '60. (MIRA 13:11)  
(Titanium--Electrometallurgy)

Studying the cyclic electrolytic recovery of titanium from its  
tetrachloride. Titan i ego splavy no.4:184-190 '60.

(MIRA 13:11)

(Titanium--Electrometallurgy)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065710014-5  
APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065710014-5  
RYABOV, V.A.; ZVIADADZE, G.N.; AL'TSHULER, O.V.; CHIZHIKOV, D.M.

Reaction of titanium with titanium tetrachloride. Trudy Inst.met.  
AN SSSR no.1:85-92 '57. (MIRA 10:11)  
(Titanium) (Titanium chlorides)



**ZVEZDOCHKIN, P., master**

**A lot depends on us. Sov.profssoiuzy 5 no.12:36 0 '57. (MIRA 10:11)  
(Ryazan--Agricultural machinery)**

ZVEZDOCHKIN, P., master

A lot depends on us. Sov.profsoiuzy 5 no.12:36 0 '57. (MIRA 10:11)  
(Ryazan--Agricultural machinery)

~~ZVIADADZE, G.A. (Tbilisi)~~

Changes in the peripheral blood and in the bone marrow in  
thyrotoxicosis [with summary in English]. Probl. endok. i gorm.  
4 no. 2:60-65 Mm-Ap '58 (MIRA 11:5)

1. Iz gospi'tal'noy khirurgicheskoy kliniki Tbilisskogo meditsinskogo  
instituta (zav. -akad. K.D. Eristavi)

(HEPERHYROIDISM, complication

blood & bone marrow changes, pathol. (Rus))

(BONE MARROW, in various diseases

hyperthyroidism, pathol. changes (Rus)

(BLOOD, in various diseases

hyperthyroidism, pathol. changes (Rus))

ZVIADADZE, G. A., Cand Med Sci (diss) -- "Changes in the peripheral blood and marrow in thyrotoxicosis". Tbilisi, 1960. 15 pp (Tbilisi State Med Inst), 200 copies (KL, No 11, 1960, 138)

ACC MRI AP6032477 SOURCE CODE: UR/0056/66/051/003/0819/0824

AUTHOR: Zvezdin, A. K.

ORG: none

TITLE: The theory of nuclear spin polarization induced by hot electrons

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 51, no. 3, 1966, 819-824

TOPIC TAGS: nuclear spin, electron polarization, electron distribution, hot electron

ABSTRACT: Nuclear spin polarization due to hot electrons (Feher effect) is studied theoretically for a case where the electron distribution function differs from the Boltzmann or Fermi distributions. The possible shape of the hot electron distribution with respect to spin sublevels is investigated. The dependence of the nuclear polarization on the distribution function parameters is elucidated. The author expresses his gratitude to V. M. Yeleonskiy, and K. K. Svidzinskiy for discussing the work. Orig. art. has: 17 formulas. [Author's abstract]

SUB CODE: 20/SUBM DATE: 31Jan66/ORIG REF: 004/OTH REF: 004/

Card 1/1

GUSEVA, G.I.; ZVEZDIN, A.K.

Transfer effects in n-InSb in inelastic polar scattering of  
electrons. Fiz. tver. tela 7 no.6:1879-1880 Ju '65.  
(MIRA 18:6)

1. Institut fiziki metallov AN SSSR, Sverdlovsk.

L 12789-66 ENT(1)/EWA(m)-2 IJP(c) AT

ACC NR: AP5026625

SOURCE CODE: UR/0056/65/049/004/1313/1325

AUTHOR: Zvezdin, A. K.

50  
45  
B

ORG: None

TITLE: Nuclear polarization in semiconductors and semimetals by a direct current

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 49, no. 4, 1965, 1313-1325

TOPIC TAGS: semiconductor theory, nuclear spin, electron spin, spin phonon interaction, nuclear magnetic moment, relaxation process

ABSTRACT: The effect of the difference between the spin and electron temperatures, brought about by an electric current in a semiconductor or semimetal, and its influence on the magnetization of the electron and nuclear spin subsystems are investigated. Two possible mechanisms for establishing a difference between the spin and electron temperatures, interaction with acoustic and optical phonons, are considered and an analysis is made of the resulting nuclear magnetization of the system in the presence of drift and heating of the electron gas. The spin relaxation time of the conduction electrons, associated with their interaction

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L 12789-66

ACC NR: AP5026625

with optical phonons, is calculated for equilibrium and for hot electrons. It is shown that interaction with optical phonons may be the principal mechanism in the establishment of nuclear and electron polarization. Author thanks P. S. Zyl'yanov and V. P. Silin for discussions and valuable comments.

Orig. art. has: 2 figures and 61 formulas.

SUB CODE: 20/ SUBM DATE: 13May65/ NR REF SOV: 004/ OTM REF: 009

Card 2/2

hw



ALEKSEYEVA, G.Ye., kand. tekhn. nauk, dots.; MELESHKINA, L.P., dots., kand. tekhn. nauk; BALUYEV, V.K., inzh.; BAMDAS, A.M., prof., doktor tekhn. nauk; VENIKOV, V.A., prof., doktor tekhn. nauk; YEZHKOVA, V.V., kand. tekhn. nauk; ANISIMOVA, N.D., dots., kand. tekhn. nauk; GANTMAN, S.A., kand. khim. nauk; GLAZUNOV, A.A., dots., kand. tekhn. nauk; GOGUA, L.K., inzh.; GREBENNICHENKO, V.T., inzh.; GRUDINSKIY, P.G., prof.; GORFINKEL', Ya.M., inzh.; ZVEZDIN, A.L., inzh.; KAZANOVICH, G.Ya., inzh.; KNYAZEVSKIY, B.A., dots., kand. tekhn. nauk; KOSAREV, G.V., dots., kand. tekhn. nauk; MESSERMAN, S.M., kand. tekhn. nauk, dots.; KOKHAN, N.D., inzh.; KUVAYEVA, A.P., dots., kand. tekhn. nauk; SOKOLOV, M.M., dots., kand. tekhn. nauk; LASHKOV, F.P., dots., kand. tekhn. nauk; LAZIN, A.I., inzh.; YUDIN, F.I., inzh.; LIVSHITS, A.L., kand. tekhn. nauk; METEL'TSIN, P.G., inzh.; NEKRASOVA, N.M., dots., kand. tekhn. nauk; OL'SHANSKIY, N.A., dots., kand. tekhn. nauk; POLEVAYA, I.V., dots., kand. tekhn. nauk; POLEVOY, V.A., dots., kand. tekhn. nauk [deceased]; RAZEVIK, D.V., prof., doktor tekhn. nauk; RAKOVICH, I.I., inzh.; SOLDATKINA, L.A., dots., kand. tekhn. nauk; TREMBACH, V.V., dots., kand. tekhn. nauk; FEDOROV, A.A., prof., kand. tekhn. nauk; FINGER, L.M., inzh.; CHILIKIN, M.G., prof., doktor tekhn. nauk, glav. red.; ANTIK, I.V., inzh., red. GOLOVAN, A.T., prof., red.; PETROV, G.N., prof., red.; FEDOSEYEV, A.M., prof., red.

(Continued on next card)

ALEKSEYEVA, G.Ye. (continued). Card 2.

[Electrical engineering manual] Elektrotekhnicheskii  
spravochnik. Pod obshchei red. A.T. Golovana i dr. Moskva,  
Energiia. Vol.2. 1964. 758 p. (MIRA 17:12)

1. Moscow. Energeticheskii institut. 2. Moskovskiy energe-  
ticheskii institut (for Golovan, Grudinskiy, Petrov,  
Fedoseyev, Chilikin, Venikov). 3. Chlen-korrespondent AN  
SSR (for Petrov).

ZVEZDIN, A. Ya., inzh.; PANOV, P.A., inzh.

Standardize movable repair equipment. Standartizatsiia 29  
no. 11:59-60 N '65 (MIRA 19:1)

ACC NR AP 6019755

SOURCE CODE: UR/0113/66/000/006/0007/0009

AUTHOR: Zvezdin, A. Ya. (Candidate of technical sciences)

ORG: none

TITLE: Determining the stationary power output and service life of truck engines

SOURCE: Avtomobil'naya promyshlennost', no. 6, 1966, 7-9

TOPIC TAGS: vehicle engine, internal combustion engine, power takeoff, stationary truck engine, vehicle engine cooling system, engine performance characteristic/  
ZIL-157 vehicle engine

ABSTRACT: To determine the advantage of using truck engines for stationary applications, a preliminary study of the efficiency of the standard cooling system for the ZIL-157 truck engine was carried out. A complex experimental and theoretical study showed that the stationary power of the ZIL-157 engine does not exceed 50% of its rated power, being only 52 hp at 2200 crankshaft rpm at an ambient air temperature of 40°. Based on data obtained by the Gor'kiy Automobile Plant, Table 1 presents the recommended stationary-engine power-output values for a number of engines. It is suggested that a section be included in the GOST covering truck-engine testing, which would indicate their stationary output. To attain the necessary engine

Card 1/2

UDC: 621.431.73:629.1-494.001.45

ACC NR: AP6019755

Table 1. Recommended stationary engine output values.

Make of engine	Rated output in hp		
		hp	Percent of rated output
GAZ-51 . . . .	70	18	25
GAZ-66 . . . .	120	50	42
ZIL-157 . . . .	104	52	50
URAL-375 . . . .	180	68	38
YamZ-236 . . . .	240	114	48

durability and cost effectiveness, recommendations are made to aid the organizations producing power-takeoff units and to assure correct engine operation. Orig. art. has: 5 figures and 2 tables.

SUB CODE: 13, 21/ SUBM DATE: none/ ORIG REF: 003/

ZVEZDIN, I.

Improve the quality of correspondence courses. Phos.delo 5  
no.4:18 Ap '59. (MIRA 12:5)  
(Fire prevention--Study and teaching)

ZVEZDIN, N. (Leningrad)

New system of operational communications and signaling. Pozh.delo  
8 no.6:24-25 Je '62. (MIRA 15:6)  
(Fire departments--Equipment and supplies)

**ZVEZDIN, V., inzhener.**

**Gigantic thermometer. Tekh.mel.24 no.6:19 Ja '56. (MIRA 9:9)  
(Moscow--Thermometers)**



ZVEZDIN, Ya.K.

Improvement of techniques in the assembling of wheel-motor blocks.  
Elek.i tepl.tiaga 6 no.12:9-11 D '62. (MIRA 16:2)

1. Kontrol'nyy master sborochnogo tsekha Chelyabinskogo elektro-  
vozoremontnogo zavoda.

(Electric locomotives--Maintenance and repair)

L 1316-66 EWT(m)/EPF(c)/EWA(d)/T/EWP(t)/EWP(z)/EWP(h)/EWA(c) LJP(c)  
ACCESSION NR: AP5022172 MJW/JD/JH UR/0032/65/031/009/1107/1109  
543.51

AUTHOR: Belyakov, Yu. I.; Zverdin, Yu. I.

TITLE: Mass-spectrometric method of studying the hydrogen permeability of heat-resistant materials

SOURCE: Zavodskaya laboratoriya, v. 31, no. 9, 1965, 1107-1109

TOPIC TAGS: mass spectrometry, hydrogen, metal hydropemeability, chromium steel, heat resistant steel

ABSTRACT: An IMS nonmagnetic pulse mass spectroscopy is used to measure the permeability and diffusion of hydrogen through a specimen of Kh18N10T steel in the form of a membrane at 450-850C. A diagram of the diffusion cell employed is given. The permeability and diffusion increase with the temperature in accordance with the exponential relations  $P = P_0 e^{-E_P/RT}$  and  $D = D_0 e^{-E_D/RT}$ . Values of the activation energies  $E_P$  and  $E_D$  and the constants  $P_0$  and  $D_0$ , calculated by a graphic analytic method, are tabulated. The presence of weld joints holding the steel membrane between the ends of Kh18N10T tube holders is found to have no effect on the permeability of hydrogen. The mass spectrometric method makes it possible to

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L 1316-66

ACCESSION NR: AP5022172

determine the permeability, diffusion, and solubility of hydrogen in various materials over a wide range of pressures and temperatures, and to follow continuously the composition of the gas phase in the course of the measurements, which is an important advantage in studies of gas diffusion in metals. Orig. art. has: 2 figures and 2 tables.

ASSOCIATION: None

SUBMITTED: 00

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SUB CODE: MM

NO REF SOV: 003

OTHER: 001

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2/2

"APPROVED FOR RELEASE: Thursday, September 26, 2002  
APPROVED FOR RELEASE: Thursday, September 26, 2002

CIA-RDP86-00513R002065710014-5  
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BELIAKOV, Yu.I.; ZVEZDIN, Yu.I.

Mass-spectroscopic method for studying the hydrogen permeability of  
refractory materials. Zav. lab. 31 no.9:1107-1109 '65. (MIRA 18:10)

ZVEZDIN, Z.K., nauchnyy sotrudnik; BOGACHEVSKAYA, L.S., nauchnyy sotrudnik;  
VOLKOVA, N.F., mladshiy nauchnyy sotrudnik; KIM, M.P., doktor  
istoricheskikh nauk, red.; POLITOV, Z., red.; TYUNYEVA, A.,  
tekhn.red.

[First steps in the industrialization of the U.S.S.R., 1926-1927]  
Pervye shagi industrializatsii SSSR, 1926-1927 gg. Moskva, Gos.  
isd-vo polit.lit-ry, 1959. 532 p. (MIRA 12:5)

1. Akademiya nauk SSSR. Institut istorii. 2. Tsentral'nyy gosudarstvennyy arkhiv Oktyabr'skoy revolyutsii i sotsialisticheskogo stroitel'stva SSSR (for Zvezdin). 3. Institut istorii AN SSSR (for Bogachevskaya, Volkova).

(Russia--Industries)

LYAMIN, Yu.; UTKIN, E.; SVERDIUK, Sh.; AKOSTA, S.; BELOVA, A.; BALDYGA, N;  
GOL'D, A.; ZVEZDINA, A.; PASECHNIK, N.; SHEYNGAUZ, S.

Revolving credit. Den. i kred. 17 no. 4:52-61 Ap '59.  
(MIRA 12:8)  
(Credit)

GARNISH, A.M.; SHAFRANSKIY, L.M.; DANILOVA, A.G.; KUZ'MINA, V.A.; Prinsipal'  
uchastnye: ZVEZDINA, E.A.; ISHCHERIKOVA, G.A.

Obtaining acrolein from a propane-propylene fraction. Nefteper. i  
neftekhim. no.10:26-28 '63. (MIRA 17:2)

1. Novokuybyshevskiy filial Nauchno-issledovatel'skogo instituta  
sinteticheskikh spirtov.

GARNISH, A.M.; SHAFRANSKIY, L.M.; SKVORTSOV, N.P.; ZVEZDINA, E.A.;  
STEPANOVSKAYA, V.F.

Catalytic oxidation of propylene to acrolein in the presence of  
water vapors. Kin.i kat. 3 no.2:257-260 Mr-Ap '62.

(MIRA 15:11)

1. Novokuybyshevskiy filial Nauchno-issledovatel'skogo instituta  
sinteticheskogo spirta.

(Propene) (Acrolein) (Water vapors)



ZVEZDINA, M.N.

There is a veterinarian on the state farm, Veterinariia 41 no.3:16-  
17 Mr '65. (MIRA 18:4)

1. Khabarovskoye proizvodstvennoye upravleniye Khabarovskogo kraya.

L 11621-66 ENT(1)

ACC NR: AP5025303

SOURCE CODE: UR/0061/65/019/004/0586/0596

AUTHOR: Men', A.N.; Sokolov, A.V.; Zvezdina, N.A.; Kurushin, Yu. N.;  
Nekoshnov, B.M.; Chudakov, V.S.

ORG: none

21.44.55  
TITLE: Determination of the energy spectrum of an impurity ion with an unfilled d-shell in a crystal

SOURCE: Optika i spektroskopiya, v. 19, no. 4, 1966, 583-596

TOPIC TAGS: crystal impurity, EPR spectrum, line splitting

ABSTRACT: The interpretation of energy spectra and EPR spectra of ions in various crystals requires the solution of a secular equation which takes into account the configuration of the ion and the symmetry of the intracrystalline field. In this paper, tables of matrix elements have been compiled which make it possible to write a secular equation at once for any term of any configuration in the case of an impurity ion with an unfilled d shell. These tables can also be used in studying EPR spectra if the field of lower symmetry produces a splitting comparable in order of magnitude to other perturbations (spin-orbital and exchange perturbations, etc.). As an example, the splitting of the principal card 1/2

UDC: 539.184.2:548.0.001.1

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L 14624-66  
ACC NR: AP5025303

terms D and F in fields of variable symmetry was analyzed. Data on the optical spectra of  $\text{Cr}^{3+}$  in  $\text{MgAl}_2\text{O}_4$  make it possible to determine local distortions caused by  $\text{Cr}^{3+}$  ion which replaces  $\text{Al}^{3+}$  ion at the octahedral sites of spinel. The data obtained are in good agreement with the experiment. Orig. art. has: 7 tables and 6 formulas.

SUB CODE: 20 / SUBM DATE: 28May64 / ORIG: 005 / OTH REF: 004

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card 2/2

1. The first part of the document is a list of the names of the persons who were present at the meeting. The names are listed in alphabetical order. The names are: [illegible]

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065710014-5  
APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065710014-5  
NOSKOV, N.S., kand. tekhn. nauk; TSAFENKO, Ye.P., kand. tekhn. nauk;  
ZVEZDKIN, A.S., inzh.; BRODSKIY, Z.I., inzh.

Control of liquid flow into a vessel using electrodes. Prom. energ.  
17 no.12:26-31 D '62. (MIRA 17:4)

ZVEZDIN, S.N., inzh.

Methods for drying peat fields for the winning of milled peat  
and means for their improvement. Torf.prom. 36 no.3:17-20  
'59. (MIRA 12:7)

1. Leningradskoye gorodskoye otdeleniye Gosudarstvennogo instituta  
po proyektirovaniyu zavodov osnovnoy khimicheskoy promyshlennosti.  
(Peat) (Drainage)

**ZVEZDKIN, V., master sporta**

**Racing canoe. IUn.tekh. 3 no.4:49-52 Ap '59.**

**(Canoes and canoeing)**

**(MIRA 12:4)**

ZVEZDKIN, V.I., inzh.; IZRAYELIT, G.B., inzh.; LOYTSYANSKAYA, M.G.,  
inzh.; NADEL'SON, R.G., inzh.

Effect of the dielectric properties of transformer oil  
on the strength of electric insulation of transformers.  
Elek.sta. 31 no.4:60-64 Ap '60. (MIRA 13:7)  
(Electric transformers) (Insulating oils)



ZVEZDKIN, V.N., inzh.; IZRAYELIT, G.B., inzh.

Authors' reply. Elek. sta. 34 no.3:90-91 Mr '63. (MIRA 16:3)  
(Electric transformers)

"APPROVED FOR RELEASE: Thursday, September 26, 2002  
APPROVED FOR RELEASE: Thursday, September 26, 2002

CIA-RDP86-00513R002065710014-5  
CIA-RDP86-00513R002065710014-5"

ZVEZDIN, V.N., inzh.; IZRAYELIT, G.B., inzh.; LOYTSYANSKAYA, M.G., inzh.

Permissible moisture level of electric transformer insulation.

Elek. sta. 33 no.10:60-62 0 '62.

(Electric transformers)

(MIRA 16:1)

STORIA, N.S., inzhener; TSUKERNIK, S.V., inzhener; LYSAKOVSKIY, G.I.,  
kandidat tekhnicheskikh nauk; ZVEZDEIN, V.M., inzhener; IZRAYELIT,  
G.B., inzhener; KOZYREV, N.A., kandidat tekhnicheskikh nauk;  
KULAKOVSKIY, V.B., kandidat tekhnicheskikh nauk; KARAMZIN, A.P.,  
inzhener; ALEKSEYEV, S.V., inzhener.

Electrical strength of stator winding insulation in 6-6.6 kv  
electric machines. Elek.sta. 27 no.4:38-51 Ap '56. (MLRA 9:8)

1. Khar'kovskiy elektromekhanicheskiy zavod (for TSukernik);
  2. Donbassenergo (for Lysakovskiy); 3. Lenenergo (for Izrayelit);
  4. LPI (for Kozyrev); 5. TSentral'naya nauchno-issledovatel'skaya  
elektrotekhnicheskaya laboratoriya (for Kulakovskiy); 6. Sverdlov-  
energo (for Karamzin); 7. Masenergo. (for Alekseyev).
- (Electric insulators and insulation--Testing)

VEZDAN, V.I., inzh.; IZRAELIT, G.B., inzh.; LOYTSYANSKAYA, M.B., inzh.

Determination of the permissible degree of moistening of transformer  
insulation. Elek.sta. 33 no.1:51-54 Ja '62. (MIRA 15:3)  
(Electric transformers--Windings)

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5/104/60/000/004/001/001  
E194/E484

AUTHORS: Zvezdkin, V.I., Engineer, Izrayelit, G.B., Engineer,  
Loytsyanskaya, M.G., Engineer and Nadel'son, R.G.,  
Engineer

TITLE: The Influence of the Dielectric Properties of Transformer  
Oil on the Electric Strength of Transformer Insulation

PERIODICAL: Elektricheskiye Stantsii, 1960, No.4, pp.60-64

TEXT: Study of the insulation of transformers in service shows  
that the insulating properties often deteriorate quite quickly,  
although the electric strength remains high the power factor  
increases and the insulation resistance diminishes. As this has  
been due to impaired characteristics of the oil, thermo-syphon  
filters have been fitted to many transformers or the oil has been  
changed. However, these are both temporary or inadequate  
solutions and it was decided to study whether it was safe to leave  
transformers in service with oil of poor dielectric properties.  
Increase in the dielectric loss angle of transformer insulation  
caused by deterioration in the electrical properties of the oil  
causes additional heating of the insulation which could lead to

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E194/E484

The Influence of the Dielectric Properties of Transformer Oil on  
the Electric Strength of Transformer Insulation

breakdown. Normally dielectric losses in transformers are so small that they may be neglected in comparison with the iron and copper losses; however, these dielectric losses increase considerably as the power factor of the oil deteriorates in service. Calculations were made for a transformer of 100 MVA, 220/110/10 kV which showed that with new oil the losses of the solid dielectric were 5.22 kW and of the oil 0.763 kW, whilst with oil of  $\tan \delta = 93\%$  the losses of the solid insulation were 10.6 kW and of the oil 54 kW. It is considered that losses of this magnitude are not dangerous in a transformer of this size particularly as most of them occur within the oil where heat transfer conditions are good. Deterioration of the electrical properties of the oil has no influence on the short term electric strength. However, impairment of the electrical properties of the oil is accompanied by increase in the permittivity and calculations are made on the assumption that the permittivity of the oil rises from 2.1 to 4.5 at 60°C. It is shown that whereas the voltage gradient in the oil

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S/104/60/000/004/001/001  
E194/E484

# The Influence of the Dielectric Properties of Transformer Oil on the Electric Strength of Transformer Insulation

then diminishes from 38 to 35 kV/cm the gradient in the bakelite rises from 16.1 to 31.4 kV/cm. However, this is not considered to be dangerous. The increased stress in paper board is less because it is more highly impregnated with oil. Thus, the calculations reveal no special risk in allowing transformers with oil of high power factor or low resistivity to continue in service. Tests were made on various transformers filled alternatively with fresh and deteriorated oil, large power transformers could not be used for these tests but instrument transformers and a smaller power transformer were used. The values of breakdown voltage were determined for the case of thermal breakdown with the transformer insulation at a temperature not below 95°C. The temperature was maintained by the use of a special heated chamber. At 20°C, the properties of the used oil were  $\tan \delta = 7\%$ , resistivity  $4.55 \times 10^{11}$  ohm cm and at 80°C  $\tan \delta = 90\%$ , resistivity  $3.2 \times 10^{10}$  ohm cm, the corresponding values for fresh oil were: at 20°C,  $\tan \delta = 0.1\%$ , resistivity  $= 3.2 \times 10^{14}$  ohm cm

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and at 80°C,  $\tan \delta = 0.5\%$ , resistivity =  $1.88 \times 10^{13}$  ohm cm. The tests on the two types of instruments, transformer and the power transformer, are described and tests results are plotted in Fig. 2, 3, 4 and 5. It is concluded that in each case, the minimum value of voltage at which thermal breakdown would commence with fresh and used oil is either the same or so little different as not to matter. Where there is a difference, the insulation temperature is in fact much higher than would be observed in service. It is concluded that power transformers in service have sufficient reserve of insulation strength for there to be no special risk in continuing to use oil of impaired properties. The above calculated and experimental data are confirmed by reliable service experience of a number of large transformers, details of which are given. Table 2 gives properties of the oil in a number of German transformers both initially and after six years operation before major overhaul. During this service period the dielectric properties of the winding insulation had deteriorated by

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a factor of 5 to 8 as compared with the initial values. The power system still has in service 7 large transformers in which the power factor of the oil is greatly in excess of the standard value. It is concluded that it is permissible to leave large transformers in service if the oil has high power factor or low resistivity, but is not wet, until the next major overhaul. However, this is no justification either for not replacing such deteriorated oil in transformers after overhaul or in relaxing the requirements on the oil refineries. There are 5 figures, 3 tables and 7 references: 4 Soviet, 2 English and 1 German.

"APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065710014-5"  
"APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065710014-5"  
GERASIMOV, V.N., inzh.; ZVEZDIN, Y.N., inzh.; IZRAVELIT, G.B., inzh.  
MOKEYENKO, I.Ye., inzh.

More on the testing of insulation of large electric machines.  
Elek.sta. 29 no.6:67-70 Jo '58. (MIRA 11:9)  
(Electric insulators and insulation--Testing)

**ZVEZDIN, Z.K.**, nauchnyy sotrudnik; **ROGACHEVSKAYA, L.S.**, nauchnyy sotrudnik;  
**BAJEVSKIY, D.A.**, redaktor; **POLYAKOVA, N.**, redaktor; **MUKHIN, Yu.**,  
tekhnicheskiiy redaktor

[Political and industrial gains of the working class of the Soviet Union (1928-1929); a collection of documents] Politicheskii i trudovoi pod'em rabochego klassa SSSR (1928-1929 gg.); [sbornik dokumentov. Pod red. D.A.Baevskogo.] Moskva, Gos. izd-vo polit. lit-ry, 1956. 611 p. (MLRA 9:9)

1. Akademiya nauk SSSR. Institut istorii. 2. Tsentral'nyy Gosudarstvennyy arkhiv Oktiabr'skoy revolyutsii i sotsialisticheskogo stroitel'stva (for Zvezdin) 3. Institut istorii Akademii nauk SSSR (for Rogachevskaya)  
(Labor and laboring classes)

KAGAN, Yu.B.; BASHKIROV, A.N.; ZVEZDKINA, L.I.; ORLOVA, N.A.

Fused iron catalysts in the synthesis of higher alcohols from carbon monoxide and hydrogen. Trudy Inst.nefti 12:200-212 '58.

(MIRA 12:3)

(Alcohols) (Catalysts)

ZVEZDINA, L.P.: BAT'KOV, A.I.

BIM factory practices. Tekst.prom. 16 no.11:44-46 N '56.

(MLRA 9:12)

1. Direktor fabriki Bol'shaya Ivanovskaya manufaktura (for Zvezdina)
2. Glavnyy inzhener fabriki Bol'shaya Ivanovskaya manufaktura (for Bat'kov).

(Textile industry)

ZVE

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APPROVED FOR RELEASE: Thursday, September 26, 2002

CIA-RDP86-00513R002065710014-5  
CIA-RDP86-00513R002065710014-5"

ZHURAVSKAYA, S.A.; ZVEZDINA, T.V.

Phytocidal action of some acaricides and insecticides on the  
cotton plant. Trudy Inst. zool. i paraz. AN Uz SSR 6:65-75  
'56. (MIRA 10:6)

(Plants, Effect of insecticides on)  
(Uzbekistan--Cotton--Diseases and pests)

AID P - 629

Subject : USSR/Electricity

Card 1/1 Pub. 27 - 33/35

Authors : Volobrinskiy, S. D., Kand. of Tech. Sci., Dotsent  
and Zvezdkin, M. N., Eng., Leningrad

Title : I. Ya. Ryshkovskiy and K. G. Kuchma; "Traction  
Substations", 487 pp., 1953 (Bibliography)

Periodical : Elektrichestvo, 8, 94-95, Ag 1954

Abstract : An extensive review of the book with some criticism  
is presented.

Institution : Leningrad Institute of Engineers of Railroad Transportation

Submitted : No date

AID P - 2019

Subject : USSR/Electricity

Card 1/1 Pub. 27 - 23/31

Authors : Volobrinskiy, S. D., Kand. of Tech. Sci., Dotsent,  
Zvezdkin, M. N., Eng., Leningrad

Title : Book Traction Substations (Book Review by  
S. D. Volobrinskiy and M. N. Zvezdkin, this journal,  
No.8, 1954) (Discussion)

Periodical : Elektrichestvo, 4, 82-83, Ap 1955

Abstract : The authors repeat their previous criticisms of this  
book. They point out, for example, that some of the  
illustrations in the book were taken from out of date  
foreign literature. They sustain their original  
criticism and evaluate the book as not corresponding  
to the requirements of a textbook for higher institutes  
of learning.

Institution: Leningrad Institute of Engineers of Railway Transportation

Submitted : No date



AID P - 2950

*Zvezdkin, M. N.*  
Subject : USSR/Electricity

Card 1/1 Pub. 27 - 15/15

Author : Zvezdkin, M. N., Eng.

Title : Scientific-technical conference on railroad electrification

Periodical : Elektrichestvo, 8, 86, Ag 1955

Abstract : The conference took place in the Leningrad Institute of Engineers of Railroad Transportation in June 1955. The author summarizes the discussions and gives a list of reports with the names of reporters.

Institution : None

Submitted : No date

~~ZVEZDKIN, P.K.~~

The use of "Plans of the arable land of collective farms" in  
physical geography classwork. Geog. v shkole 21 no. 1:51-52 Ja-F '58.  
(MIRA 11:7)

1. Dubrovinskaya shkola Kostromskoy oblasti.  
(Physical geography--Study and teaching)

Defects in type VM-35 cutout switches. Elek.sta. 28 no.8:75-76  
Ag '57. (MIRA 10:10)  
(Electric cutouts)

**ZVEZDKIN, V.H., inzhener; IZRAELIT, G.B., inzhener.**

Replacing windings of large electrical machines. Elek. sta. 25 no.8:  
33-35 Ag '54. (MLRA 7:9)  
(Electric machinery--Maintenance and repair)

Testing the insulation of large transformers. Elektrichestvo  
no.7:70-73 J1 '56. (MLRA 9:10)

1. Lenenergo.  
(Insulating oils) (Electric transformers)

**ZVEZDKIN, V.N., inzhener; IZRAYELIT, G.B., inzhener.**

Testing the insulation of large electric machines. Elek.sta.27 no.6:  
32-35 Je '56. (MIRA 9:9)  
(Electric insulators and insulation--Testing)

1. ZVEZDKIN, V.N.; NADEL'SON, R.G.
2. USSR (600)
4. Electric Transformers
7. Effect of the properties of oil on the characteristics of transformer insulation,  
Eng. V.N. Zvezdkin, R.G. Nadel'son, Elek.sta. 24 no. 3, 1953.

9. Monthly List of Russian Accessions, Library of Congress, APRIL 1953, Uncl.

ZVEZDKIN, V.N.; NAMEL'SON, R.O.

Measurement of leakage currents in transformers. Elekt. Stantsii, '52,  
No.12, 32-4. (MLRA 6:1)  
(EEA 56, no.666:2492 '53)



1. ZVEZDIN, V. N. ENG. LOTSYANSKAYA, M. G. ENG.
2. USSR (600)
4. Electric Insulators and Insulation
7. Frost resistance of sealing material. Elek. sta. 23, no. 10, 1952.

9. Monthly List of Russian Accessions, Library of Congress, February 1953. Unclassified.

ZVEZDKIN, V.N., inzhener; IZHAYBLIT, G.B., inzhener,

Problem of testing the insulation of large electrical machines.  
Elektrichestvo no.2:64-67 P '54. (MLRA 7:2)

1. Lenenergo. (Electric insulators and insulation--Testing)

ZVEZDKIN, V. N. and NADEL'SON, R. G. Calculating Leakage Currents in Transformers  
(Ob Izmerenii Tokov Utechki v Transformatorakh), pp. 32-34

The authors, analyzing many high-voltage laboratory experiments with transformer insulation, conclude that the leakage measurements do not present any advantage over the insulation resistance tests made with a megger. (Graphs and tables).

SO: ELEKTRICHESKIY E STANTSII, No. 12, Dec. 1952, Moscow (1614306)

Problem of testing the insulation of large electrical machines.  
Elektrichestvo no.2:64-67 F '54. (MLRA 7:2)

1. Lenenergo. (Electric insulators and insulation--Testing)

USSR/Chemistry - Isotopes

11 Sep 53

"The Influence of Pressure on the Velocity of Ionic Reactions of Isotope Exchange," M. B. Neyman, M. G. Gonikberg, V. B. Miller, Yu. M. Shapovalov and V. S. Zvezdkin, Inst Of Chem Phys and Inst of Org Chem, Acad Sci USSR

DAN SSSR, Vol 92, No 2, pp 365-368

Studied the effect of pressure on the reaction velocity of isotope exchange in reactions of propyl iodide with active iodide ions and of propyl bromide with active bromide ions at 19° and pressures of 1, 1500, and 2400 atm. Used also solns of NaI<sup>131</sup> and NaBr<sup>82</sup> as source of halogen ions. Found that the formation of an activated complex in these reactions is associated with a decrease in the volume of the complex characteristic for normal bimolecular reactions.

269T20

**ZVEZDKIN, V.V., inzh.; LOYTSYANSKAYA, M.O., inzh.**

**Defects of bituminous compositions for high-voltage bushings.  
Elek.sta.29 no.3:62-64 Mr '58. (MIRA 11:5)  
(Electric insulators and insulation)**

ZVEZDKINA, A.S., starshiy nauchnyy sotrudnik

Effect of molybdenum on spring and winter vetch yields. Zemledie  
7 no.7:48-49 J1 '59. (MIRA 12:9)

1. Vladimirskaia gosudarstv.sel'skokhoz.opytная stantsiya,  
(Vetch) (Molybdenum)

ZVEZDKINA, A. S.

27816. Zvezdkina, A. S. Napravlennoye Vospitaniye skorospelosti u yarovoy viki. Seleksiya i semenovodstvo, 1949, No. 9, s. 36-38

SO: Letopis' Zhurnal'nykh Statey, Vol. 37, 1949



ZVEZDKINA, A. S.

Zvezdkina, A. S. "Perennial grasses," In symposium: Nauch. otchet Tulun. gos. selekts. stantsii za 1941-1944 gg., Moscow, 1948, p. 85-98

SO: U-3264, 10 April 53 (Letopis 'Zhurnal 'nykh Statey, No. 4, 1949).

5(3), 22(4)

DATE/TIME RECEIVED FOR POSTAL DELIVERY

**Abkasheniya naok 886.R. Institut nart'i**

Evdy, t. 12 (Transactions of the Petroleum Institute, USSR, Academy of Sciences, Vol 12) Moscow, Izd-vo AN SSSR, 1958. 395 p. Errata slip inserted. 1,700 copies printed.

Ed.: S. L. Bertiyenko, Professor; Ed. of Publishing House: K. G. Klyassov; Tech. Ed.: V. V. Golubova.

**RUSSOON!** The book is intended for scientists, engineers, and technicians in the petroleum industry.

**NOTE:** This collection of articles describes the results of studies on the chemistry and technology of petroleum and gas conducted in the laboratories of the Petroleum Institute, Academy of Sciences, USSR, in 1965 and 1967. A new section "Petroleum, Petrochemical, Petrochemical and Technology of Petroleum" has been included in the collection of articles. A list of investigations published by the scientists of the Institute in 1956 and 1957 and a list of dissertations for the Doctor of the Sciences and the Candidate of the Sciences for the years 1957-1959 of the Academy of Sciences, USSR, are given.

I. L. Dz. Izhabova, P. V. Korenevskaya, I. A. Musyev, and V. Ya. Zhukhshina.  
 Council of the Petroleum Institute, Academy of Sciences, USSR, are given  
 changes in the activity of silica gel in the chromatographic separation  
 of hydrocarbons

### III. CATALYSTS AND CATALYTICS

Reagan, R. L., A. A. Rehak, L. A. Rehak, and R. A. Orloff, *Fused*  
non catalyst for the synthesis of *1,2,3,4*-dioxane from Carbon Monoxide  
and Hydrogen

Smol'tsov, A. N., Ye. V. Kuznetsova, and Yu. L. Kuznetsov. Some Characteristics of the Decomposition of Carbon Monoxide into C and CO<sub>2</sub> in the Presence of Reduced Iron Catalysts. 273

seum, Va. 2., A. I. Baskin, R. M. Jolley, L. G. Hargrove, and A. G. Levan. Effect of Added Ferroalloys on the Activity and Stability of Pused Iron Catalysts for the Synthesis from  $\text{CO}_2$  and  $\text{H}_2$ . 228

Smeshchikov, A. M., and V. I. Moravk. Study of Conditions of Synthesis from  
o-Toluen Monoxide and Nitrogen in the Presence of Talc Catalysts

Vol'shin, S. A., A. Ya. Rozovsky, and V. V. Khabaza. Method of kinetic investigations of continuous Casson's fractions

Probst, J. V., A. Ya. Rosovskiy, and V. V. Shchetin. Intradiastereoselection in Catalytic Reduction of Ethyl Alcohol

Severnykh, P. V., and V. V. Chubel's. *Adaptive Properties of  
Human Reactions and Attention*. Moscow, 1966.

Yakovleva, P. V., and V. V. Gubel'skii. Activity and Structure of  
Lipid Oxidation and the Lipid Oxidation Properties

1930] *W. V. F. and V. V. Shubert, Anomalous Values of the Energy*  
*of the First Two Levels of the Hydrogen Atom*

**Streamlined and V. N. Karicheva. Catalytic Addition of Hydrogen to Styrene in Aqueous Phase** 276

## IV. TECHNOLOGY OF PETROLEUM AND PETROCHEMICAL SYNTHESIS 23

Y. V. A. Z. Babiruy, and H. Maruyama. Study of the Process of  
Continuous Oxidation of Paraffinic Hydrocarbons to Alcohols 261

neolina, V. V., A. E. Baskitov, and M. Martynov. Investigation of the Effect of Boric Acid and Boric Anhydride on the Liquid Phase Oxidation

Paraffinic Hydrocarbons

297

S. S. Meshkov, V. A. Kuznetsov, I. A. Stepanov, and V. A. Kuznetsov, *Synthesis of Ethyl Alcohol Containing the Radioactive Isotopes*, 279

**Synthesis of Paraffinic Hydrocarbons with Ammonia in the Presence of  
Metal Catalysts**

POYER, K. K. - [deceased], A. V. Kopyrkina, P. O. Azov'yev, N. N. Kopyrkina. Low-Temperature Oxidative Petroleum Cracking

KAGAN, Yu.B.; BASHEIROV, A.N.; ZVEZDEKINA, L.I.; ORLOVA, N.A.; KLIGER, G.A.

Influence of reduction conditions on the properties of molten  
iron catalysts used in alcohol synthesis from carbon monoxide  
and hydrogen. Trudy inst. nefti. 10:262-268 '57. (MIRA 11:4)  
(Alcohols) (Carbon monoxide) (Hydrogen)

Use of the calculation-analytical method in studying the synthesis  
of hydrocarbons and oxygen-containing compounds from carbon monoxide  
and hydrogen. Trudy Inst. nefti no.6:151-158 '55. (MLRA 8:12)  
(Oxygen compounds) (Hydrocarbons)

USENKO, Vladimir Andreyevich, prof., doktor tekhn. nauk; ZABELOTSKIY,  
Lazar' Markovich, kand. tekhn. nauk; KUNTSEVICH, V.A., inzh.,  
retsenzent; ZVEZDKINA, Ye.V., inzh., retsenzent; IHRAGIMOV,  
S.S., kand. tekhn. nauk, retsenzent; SHTEYNQART, M.D., red.;  
BATYREVA, G.G., tekhn. red.

[Silk technology] Tekhnologiya shelka. Pod red. V.A.Usenko.  
Moskva, Izd-vo nauchno-tekhn. lit-ry RSFSR. Pt.2. [Silk spin-  
ning] Shelkopriadenie. 1961. 343 p. (MIRA 15:2)  
(Silk) (Spinning)

ZVEZDOV, I.M., inzh.; VANYAYEV, N.A., inzh.

Production-line construction of electrolysis shops.  
Prom. stroi. 40 no.9:2-6 '62. (MIRA 15:11)

1. Trest Kuznetskpromstroy.  
(Aluminum plants)  
(Concrete construction)

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Simultaneous Tension and Torsion of a  
Cylindrical Bar in the Elastic-Plastic Range  
by J. L. Durelli and J. R. Durelli  
J. Appl. Mech. 2, 1955 pp 51-55

*[Handwritten signature]*

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KHANOVICH, I.G.; ZVEZDNYI, A.M., <sup>otv. red.</sup>; GAL'CHINSKAYA, V.V.,  
tekhn. red.

[Potential interference rejection of telecommunication  
systems] Potentsial'naya pomekhoustoichivost' sistem  
svyazi; uchebnoe posobie. Leningrad, Leningr. elektro-  
tekhn. in-t svyazi, 1962. 78 p. (MIRA 16:10)  
(Telecommunication) (Information theory)

9.3200

26636  
S/044/60/000/003/008/012  
C111/C222

AUTHOR: Zvezdnyy, A.M.

TITLE: The representation of the series  $\sum_{n=1}^{\infty} e^{-rn^2} \frac{\cos nx}{\sin nx}$  in a closed form

PERIODICAL: Referativnyy zhurnal. Matematika, no.3, 1960, 161, abstract 3492 (Tr. Leningr. elektrotekhn. in-ta svyazi, 1958, vyp.3 (36), 105-110)

TEXT: The following approximate formulas are given:

$$\begin{aligned}\sum_{n=1}^{\infty} \frac{\cos nx}{e^{rn^2}} &\approx \frac{\cos x - e^{-2r}}{e^r + e^{-2r} - 2e^{-r} \cos x}, \\ \sum_{n=1}^{\infty} \frac{\sin nx}{e^{rn^2}} &\approx \frac{\sin x}{e^r + e^{-2r} - 2e^{-r} \cos x}, \\ \sum_{n=1}^m \frac{\cos nx}{e^{rn^2}} &\approx \frac{[1 + e^{-3r(m+1)}] \cos x - e^{-2rm} \cos 2x - e^{-2r}}{e^r + e^{-2r} - 2e^{-r} \cos x}, \\ \sum_{n=1}^m \frac{\sin nx}{e^{rn^2}} &\approx \frac{[1 - e^{-3r(m+1)}] \sin x - e^{-2rm} \sin 2x}{e^r + e^{-2r} - 2e^{-r} \cos x}.\end{aligned}$$

These formulas can be used for the calculation of the transition processes in long circuits with losses.

Card 1/1. [Abstracter's note: Complete translation.]

ZVEZDOV, I.M.

Correspondence of building plans and supply centers for the construction industry. Trudy MIRI no.15:157-159 '61.

(MIRA 14:12)

1. Nachal'nik stroitel'no-montazhnogo upravleniya tresta Cherepovetsmetallurgstroy.

(Building materials industry)

2306. CHANGES OF THE PERIPHERAL BLOOD AND BONE MARROW IN  
THYROTOXICOSIS (Russian text) - Zviadadze G. A. - PROBL. ENDOKR.  
1958, 4/2 (60-65) Tables 5

The changes of the peripheral blood and bone marrow which take place before and after the surgical treatment of thyrotoxicosis were studied. Hypochromic anaemia is a frequent symptom in thyrotoxicosis. Lymphocytosis and thrombocytopenia are, likewise, noted. The ESR is usually increased. An increased number of leucoblasts is found in the bone marrow. The number of normoblasts is either normal or diminished. Megakaryocytes are frequently absent. Both the peripheral blood and the bone marrow return to a normal condition after the surgical treatment of thyrotoxicosis.

(III, 6)

Changes in the bone marrow following thyrotoxicosis. Soob. AN  
Grus.SSR 18 no.2:237-240 P '57. (MIRA 10:7)

1. Akademiya nauk Gruzinskoy SSR, Institut eksperimental'noy i  
klinicheskoy khirurgii i gematologii, Tbilisi. Predstavleno  
akadmirom I.D. Eristavi.

(Marrow)

Changes in peripheral blood during thyrotoxicosis. Soob. AN Gruz.  
SSR 20 no. 2:241-243 F '58. (MIRA 11:7)

1. AN Gruz SSR, Institut eksperimental'noy i klinicheskoy khirurgii  
i gematologii, Tbilisi. Predstavleno akademikom K.D. Bristavi.  
(THYROID GLAND--DISEASES)  
(BLOOD--ANALYSIS AND CHEMISTRY)

ZVIADADZE, G.A.

Changes in the peripheral blood following surgical treatment of  
thyrotoxicosis. Soob. AN Gruz. SSR 20 no. 4:505-506 Ap '58.

(MIRA 11:7)

1. Institut eksperimental'noy i klinicheskoy khirurgii i gematologii  
AN GruzSSR, Tbilisi. Predstavleno akademikom K.D. Eristavi.

(THYROID GLAND--SURGERY)

(BLOOD--ANALYSIS AND CHEMISTRY)

Changes in the bone marrow following the surgical treatment of  
thyrotoxicosis. Soob. AN Gruz.SSR 18 no.4:473-474 Ap '57.  
(MLRA 10:7)

1. Akademiya nauk Gruzinskoy SSR, Institut eksperimental'noy i  
klinicheskoy khirurgii i gematologii, Tbilisi. Predstavleno  
akademikom K. D. Kristavi.

(MARROW) (THYROID GLANDS--SURGERY)



ZVIADABE, G. E., Cand. of Agric Sci. -- (diss) "On the problem of the study of the biologi-  
coecology of mulberry trees under eastern Georgian conditions." Tbilisi, 1957, 28 pp,  
Georgian Agricultural Institute), 100 copies (KL, 29-57, 92)

S/598/60/000/004/017/020  
D217/D302

AUTHORS: Zviadadze, G.N. and Chizhikov, D.M.  
TITLE: Study of cathode polarization in NaCl-KCl-TiCl<sub>3</sub> melts  
SOURCE: Akademiya nauk SSSR. Institut metallurgii. Titan i yego  
splavy. No. 4, Moscow, 1960. Metallurgiya titana, 153-157

TEXT: The polarization during electrolysis of a solution of TiCl<sub>3</sub> in an equimolecular solution of NaCl and KCl was determined by plotting I-V curves. The purpose of this work was to study the polarization for those cathode current densities within the limit of which electrolysis in titanium chloride melts is carried out in laboratory and industrial vats. The apparatus for plotting I-V curves is shown in Fig. 1. The cell for taking measurements was placed in a steel container with a water-cooled flange and lid. A mixture of NaCl and KCl was melted and a vapor-gas mixture of TiCl<sub>4</sub> and argon was introduced into the cell containing the melt, on the bottom of which a weighed quantity of Ti

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Study of cathode ..

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D217/D302

powder had been placed. After adding the required weight of  $TiCl_4$ , the thermocouple and sheath were removed from the container and some of the melt was sucked into an opening in the porcelain tube, where it froze, and was removed for analysis. During this period, excess argon was supplied to the container in order to ensure better protection of the metal against oxidation. After preparing the melt, electrodes were lowered into the cell, connected up, and measurements were started. The accumulator voltage was supplied to the commutator terminals, and from there, through a rheostat and a potentiometer to the electrodes. After the measurements were completed, the melts were re-analyzed to estimate the change in composition occurring within the period of experiment. The temperature in the furnace was kept constant by the potentiometer. The geometrical dimensions of cathode and anode and their ratio in the cell used, corresponded to the cathode polarization study. A molybdenum wire of 1.6 cm diameter was used as the cathode; this was placed along the vertical axis inside a graphite cylinder of 7.3 cm diameter and 19 cm length, which was made the anode. The ratio

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Study of cathode ...

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D217/D302

between anode and cathode surface area was 137. Owing to the insignificantly low anodic current density, the anode behaved as a virtually non-polarizing electrode, and it was, therefore, used as a reference electrode. The electrodes were separated by means of a bung having an opening at the bottom and being concentrically placed between the anode and the cathode. Measurements were carried out at 730° and 830°C, these being the most characteristic temperatures for the electrolysis of sodium, potassium and titanium chloride solutions. The concentration of lower-valency Ti in the melt did not exceed 3-4 wt.%. It was found that the potential, extrapolated to zero current density, decreased with increasing temperature. The influence of the lowest valency Ti, particularly at 830°, is insignificant. It is suggested that discharge of Ti ions and alkali metal occurs alternately during electrolysis at the cathode current densities investigated. There are 3 figures, 2 tables and 1 Soviet-bloc reference.

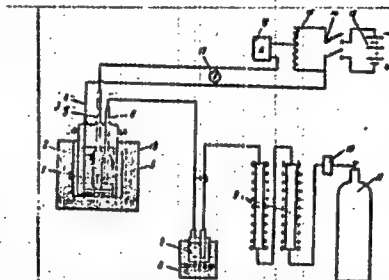
Card 3/4

Study of cathode ...

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D217/D302

Layout of apparatus for plotting I-V curves;

1 - cell; 2 - hermetic steel container; 3- cathode; 4 - anode wire;  
5 - diaphragm; 6 - tube for supplying the tetrachloride; 7 - container  
with tetrachloride; 8 - oil bath; 9 - furnaces for the purification of  
argon; 10 - galvanometer; 11 - argon bomb; 12 - furnace; 13 - accumula-  
tor; 14 - key; 15 - rheostat; 16 - ammeter; 17 - voltmeter.



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Fig. 1. Scheme of the apparatus for plotting I-V curves.  
1 - cell; 2 - hermetic steel container; 3 - cathode; 4 - anode wire; 5 - diaphragm;  
6 - tube for supplying the tetrachloride; 7 - container with tetrachloride; 8 - oil bath;  
9 - furnaces for the purification of argon; 10 - galvanometer; 11 - argon bomb; 12 - furnace;  
13 - accumulator; 14 - key; 15 - rheostat; 16 - ammeter; 17 - voltmeter.

ZVIADADZE, G.N.; RTSKHILADZE, V.G.

Thermodynamics of arsenopyrite decomposition. Soob. AN Gruz.  
SSR 33 no.1:175-181 Ja '64. (MIRA 17:7)

1. Institut metallurgii AN Gruzinskoy SSR, Tbilisi. Predstav-  
leno akademikom F.N. Tavadze.

RTSKHILADZE, V.G.; ZVIALADZE, G.N.

Sublimation of arsenic from arsenopyrite ores of Tsani formation and the condensation of its vapors. Soob. AN Gruz. 34  
no.1:127-134 Ap'64 (MIRA 17:7)

1. Gruzinskiy metallurgicheskiy institut. Predstavleno akademikom F.N. Tavadze.

S/598/60/000/004/020/020  
D217/D302

AUTHORS: Zviadadze, G.N., Karyazina, I.N. and Chizhikov, B. M.  
TITLE: On studying the cyclic electrolysis of titanium tetrachloride  
SOURCE: Akademiya nauk SSSR. Institut metallurgii. Titan i yego splavy. No. 4, Moscow, 1960. Metallurgiya titana, 184-190

TEXT: Electrolytes containing lower-valency titanium chloride were prepared in graphite vessels, in which mixtures of titanium chloride and powder were placed. After melting the chlorides and subsequently blowing argon through the melt, a vapor-gas mixture of argon and titanium tetrachloride was supplied to the bottom of the graphite vessel. In a number of experiments,  $TiCl_4$  without argon was supplied to the melt. In this case,  $TiCl_4$  was delivered through a burette, whose end was joined to a graphite tube which was immersed in the melt. In these experiments, the surface of the melt was protected with argon. On finishing the experiments, the melt was allowed to freeze under an argon atmosphere and

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On studying the cyclic ...

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was submitted to chemical analysis. Di- and trivalent titanium were analyzed as follows: After grinding and mixing the electrolyte, two portions were withdrawn and weighed. The first was dissolved in a 20% solution of iron-ammonium alum, and the second was dissolved in 10 N HCl (or in 5% HCl with subsequent acidification with 10 N HCl). To the first solution,  $H_2SO_4$  (1:3) was added until the color of the solution changed from brown to green, after which this solution was titrated with 0.1 N  $K_2CrO_4$  solution in the presence of phenyl antropic acid. The second solution, after addition of  $H_2SO_4$  (1:3) was also titrated with 0.1 N  $K_2CrO_4$  solution in the presence of the same indicator. If  $V_1$  is the volume, in ml, of  $K_2CrO_4$  solution, used up in the titration of the first solution (calculated per gram of the weighed portion) and  $V_2$  is the volume, in ml, of  $K_2CrO_4$  solution used up in the titration of the second solution (also as calculated per 1 g of the weighed portion), then the following equation can be set up:  $0.0024x + 0.0048(V_1 - x) = 0.0048V_2$

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On studying the cyclic ...

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where  $x$  is the volume of  $K_2CrO_4$  solution (in ml) used up in the titration of the divalent titanium only. For investigating the electrolysis of melts produced by chlorination of titanium by its tetrachloride, a two-stage scheme was adopted, i.e. titanium was at first chlorinated and then electrolytically deposited from the melts produced in the same vessel. Graphite vessels were used for the experiments, which were charged with a mixture of NaCl, KCl and Ti. After melting the electrolyte and supplying the vessel with the required quantity of  $TiCl_4$ , the melt obtained was electrolyzed without a further  $TiCl_4$  supply.

Molybdenum wire of 2 mm diameter was used as the cathode and the non-working portion was protected by a porcelain tube. Initially a graphite rod of 15 mm diameter was used as the anode. Subsequently, the surface of the graphite vessel was used as the anode. After the experiment, the melt together with the products of electrolysis were frozen and subjected to phase separation. The experiments have shown that it is possible to obtain titanium by electrodeposition from melts produced by chlorination of titanium by its tetrachloride. An X-ray analysis of the

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On studying the cyclic ...

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electrodeposited powders, after treatment of the latter with a 5% HCl solution, confirms that they consist of metallic titanium and donot contain metallic oxides. There are 5 tables and 2 Soviet-bloc references.

S/826/62/000/000/006/007  
D408/D307

AUTHORS:

Budnevskiy, A.M., Li Hsi-ch'ang, Chizhikov, D.M.  
and Zviadadze, G.N.

TITLE:

Special features of the behavior of molten titanium  
dichloride and its role during electrolysis

SOURCE:

Fizicheskaya khimiya rasplavlennykh soley i shlakov;  
trudy Vses. soveshch. po fiz. khimii raspl. soley  
i shlakov, 22 - 25 noyabrya 1960 g. Moscow. Metall-  
urgizdat, 1962, 344 - 352

TEXT:

The properties of KCl-NaCl melts containing  $TiCl_2$ ,  
their stability in the presence of quartz, graphite, Fe and Ti and  
their behavior during electrolysis were studied, since such melts  
facilitate the production of large Ti crystals.  $TiCl_2$  was prepared  
in an apparatus consisting mainly of a quartz tube divided into two  
chambers by a perforated plate, the upper chamber being heated to  
1050 - 1070°C and the lower to 800°C. Argon and  $TiCl_4$  were introduced  
into the upper chamber which contained compressed Ti shavings. The

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Special features ...

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D408/D307

produced molten  $\text{TiCl}_2$  passed through the perforated plate and was collected in a graphite beaker in which it solidified. Analysis showed that the  $\text{TiCl}_2$  was free from trichloride. Stability of the melts was investigated in crucibles made from the test materials, finding that it was least in quartz and greatest in Ti crucibles. A portion of the  $\text{KCl-TiCl}_2$  system (up to 20 mol%  $\text{TiCl}_2$ ) was thermographically investigated both in Fe and in Ti crucibles; the results obtained in Fe crucibles were significantly different from those obtained in Ti crucibles. The stabilizing effect of Ti was used for the development of a method for the electrolytic production of Ti; lower chlorides of Ti in a molten alkali metal chloride melt are electrolyzed, the melt composition being maintained constant by reduction of  $\text{TiCl}_4$  with metallic Ti. The electrode processes consist of discharge of  $\text{Cl}^-$  and  $\text{Ti}^{2+}$  or  $\text{Ti}^{3+}$  ions; in the first case, 1 of each 2 g-atoms of obtained Ti, and in the second case, 1 in every 4 g-atoms, is returned to the cycle. In either case, four Faradays of electricity and one mole of  $\text{TiCl}_4$ , as also during the electrolysis of  $\text{TiCl}_4$ , are consumed in the production of one g-atom of non-recycled Ti. During the electrolysis

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Special features ...

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D408/D307

the  $\text{TiCl}_2$  content of the melt remained approximately constant, whereas the  $\text{TiCl}_3$  content decreased continuously; this was due to the presence of the metallic phase in the catholyte, enabling the reaction  $\text{Ti} + 2\text{TiCl}_3 \rightarrow 3\text{TiCl}_2$  to proceed. The cathodic deposit consisted of an inner bright spongy layer, almost free from salts, of relatively coarse particles which adhered together comparatively strongly, and of an external dark grey spongy layer, impregnated with salts, which crumbled into fine powder when the salts were washed away. There are 5 figures and 3 tables.

ASSOCIATION: Institut metallurgii AN SSSR (Institute of Metallurgy AS USSR)

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Card 3/3

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807/155-5-5

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WILLIAM A. A. BAYBERRY.

## Large and small

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## Methodology

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"The Use of Radioactive Selenium for Investigating the Sulfur-selenium System"

Isotopes and Radiation in Chemistry, Collection of papers of  
2nd All-Union Sci. Tech. Conf. on Use of Radioactive and Stable Isotopes and  
Radiation in National Economy and Science, Moscow, Izd-vo AN SSSR, 1958, 380pp.

This volume published the reports of the Chemistry Section of the  
2nd AU Sci Tech Conf on Use of Radioactive and Stable Isotopes and Radiation  
in Science and the National Economy, sponsored by Acad Sci USSR and Main  
Admin for Utilization of Atomic Energy under Council of Ministers USSR  
Moscow 4-12 Apr 1957.



CHIZHIKOV, D.M.; ZVIADADZE, G.N.; KORSUNSKAYA, V.N.

Interaction of titanium tetrachloride with its dioxide in  
presence of carbon. Tsvet. met 33 no. 12:42-46 D '60.

(MIRA 13:12)

(Titanium--Metallurgy)

ZVIADADZE, G.N.; CHIZHIKOV, D.N.

Studying cathodic polarization in  $\text{NaCl} - \text{KCl} - \text{TiCl}_3$  melts. Titan  
i ego splavy no. 4:153-157 '60. (MIRA 13:11)  
(Titanium--Electrometallurgy)

Studying the cyclic electrolytic recovery of titanium from its  
tetrachloride. Titan i ego splavy no.4:184-190 '60.

(HIRA 13:11)

(Titanium--Electrometallurgy)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065710014-5  
APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065710014-5  
RYABOV, V.A.; ZVIADADZE, G.N.; AL'TSHULER, O.V.; CHIZHIKOV, D.M.

Reaction of titanium with titanium tetrachloride. Trudy Inst.met.  
AN SSSR no.1:85-92 '57. (MIRA 10:11)  
(Titanium) (Titanium chlorides)

**ZVEZDOCHKIN, P., master**

A lot depends on us. Sov.profssoiuzy 5 no.12:36 0 '57. (MIRA 10:11)  
(Ryasan--Agricultural machinery)

ZVEZDOCHKIN, P., master

A lot depends on us. Sov.profsoiuzy 5 no.12:36 0 '57. (MIRA 10:11)  
(Ryazan--Agricultural machinery)

ZVIADADZE, G.A. (Tbilisi)

Changes in the peripheral blood and in the bone marrow in  
thyrotoxicosis [with summary in English]. Probl. endok. i gorm.  
4 no.2:60-65 Nov-Apr '58 (MIRA 11:5)

1. Iz gospi'tal'noy khirurgicheskoy kliniki Tbilisskogo meditsinskogo  
instituta (zav. -akad. K.D. Eristavi)  
(HYPERTHYROIDISM, complication  
blood & bone marrow changes, pathol. (Rus))  
(BONE MARROW, in various diseases  
hyperthyroidism, pathol. changes (Rus)  
(BLOOD, in various diseases  
hyperthyroidism, pathol. changes (Rus))

ZVIADADZE, G. A., Cand Med Sci (diss) -- "Changes in the peripheral blood and marrow in thyrotoxicosis". Tbilisi, 1960. 15 pp (Tbilisi State Med Inst), 200 copies (KL, No 11, 1960, 138)